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ROENTGEN RAY EXAMINATION OF THE SMALL INTESTINE IN NUTRITIONAL DISTURBANCES*

By ROSS GOLDEN, M. D.
New York City, New York

When the history of the present medical age is written, the investigation of the problems of nutrition will stand out as a major achievement. Numerous writers have testified that malnutrition in its various forms is far from uncommon in this land of plenty and that its clinical manifestations are greatly varied. It is of considerable importance to recognize this condition, particularly in its early stages, and to correct it without delay. To this end röentgen ray methods of examination seem to be making an increasingly important contribution.

The purpose of this paper is to discuss the disturbances in the physiology and morphology of the small intestine, which are associated with abnormal nutritional conditions, and their manifestations on röentgen ray examination.

In this discussion the term "deficiency state" will be used in a broad sense to imply a lack of some important factor necessary for proper functioning of the organism, e. g., vitamin or protein, even though the exact nature of the deficiencies may not be known.

THE AUTHOR

Dr. Golden, graduate Harvard Medical School; diplomate, American Board of Radiology; Fellow American College of Radiology; Professor Radiology Columbia University College of Physicians and Surgeons, N. Y.

CLASSIFICATION

Deficiency states have been divided into two broad groups—primary and secondary.

Primary deficiency states are those which apparently arise without obvious cause, e. g., celiac disease, non-tropical sprue, etc. Possibly a chronically deficient diet may be a factor.

Those deficiency states are classed as secondary in which the condition is caused by, or at least associated with, disease of the gastrointestinal tract which might interfere with the digestion or absorption of nutriment, e. g., peptic ulcer, carcinoma, primary disease of the small intestine such as sclerosing enteritis or tuberculosis, primary disease of the

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mesentery such as sclerosing inflammation of the lymphatics or lymphoblastoma, or biliary tract disease. They also result from the low vitamin intake incidental to some therapeutic diets or to voluntary dietary restriction.

Attention was first called to the changes in the small intestine demonstrable by röentgen ray methods in "chronic steatorrhea" by Snell and Camp (1934). Mackie and Pound (1935) found the same changes in tropical sprue. Mackie, Miller and Rhoads (1935) described similar changes associated with severe chronic colitis. The writer (1936) pointed out similar but usually less marked disturbances in the small intestine in cases of infantile celiac disease. Snell and Camp remarked that the changes they noted were probably not specific and could be caused by other conditions. In this connection it is of interest that Vespigiani (1925) described in four cases exactly the same type of small intestine disturbance which he called small intestinal stasis without obstruction, but at operation found "chronic mesenteritis"; his patients apparently did not have steatorrhea. Gutzeit and Kuhlbaum (1934) demonstrated hypomotility and dilatation of the small intestine in icterus and showed by experiments on dogs that the disturbance was due to a lack of bile in the intestine and could be relieved by the oral administration of bile. Barden and his co-workers (1938) showed that similar intestinal disturbances could be produced in dogs by lowering the serum protein and could be made to disappear by raising the blood protein to normal.

Thus it appears that Snell and Camps' prediction was correct and that these röentgen abnormalities of small intestinal morphology and physiology may be associated with a number of different conditions.

TECHNIQUE OF EXAMINATION

Abnormalities of the small intestine in deficiency states are often noted on ordinary barium meal examination of the gastrointestinal tract, if the examiner takes the trouble to look at whatever loops of jejunum or ileum which happen to be filled. However, these changes are best brought out by a special examination of the small intestine which we have come to call a "small intestine study."

The patient appears for examination early in the morning without breakfast. Two ounces of plain barium sulphate stirred up in water are given and the stomach and duodenum are examined in the usual way. Films of the abdomen with the patient prone are taken at half-hour intervals until the barium reaches the cecum or until five hours have elapsed, when the patient is given lunch. Eating is normally followed by increased motility of the small intestine. Fluoroscopic observations are made at least two or three times during the procedure.

THE NORMAL SMALL INTESTINE

Recognition of the changes under discussion depends upon familiarity with the appearance of the normal small intestine. Good discussions of the röentgen manifestations of the normal small intestine have been published by Menville and Ané; Cole; Ravdin,

Fig. 1—NORMAL SMALL INTESTINE

The barium shadow is continuous. The lumen is even in caliber except at the site of short peristaltic contractions. The mucosal folds are normal in width and spacing.

Pendergrass, Johnston and Hodes, and others. The details cannot be repeated here.

In brief, (Fig. 1) the barium shadow of the normal small intestine is usually continuous and the lumen is even in width except where a contraction happens to be taking place. The peristaltic constrictions are usually short and the wall promptly relaxes behind them. The width of the jejunal shadow averages 2.5 to 3.0 cm., and that of the ileum 2.0 to 2.5 cm. The high mucosal folds of the jejunum give the barium shadow the characteristic feathery appearance. These folds are usually one to two mm. wide and lie very close to each other, one to three mm. apart. Lower in the jejunum the folds become lower and lie farther apart but are not wider. The ileal margins often appear smooth but low mucosal folds can usually be demonstrated by pressure films.

Under normal conditions the barium reaches the cecum in from one and one-half to five hours, the average being between two and four hours; the ileum contains barium at six hours and is empty at nine hours. Eating is normally followed by increased motility of the small intestine; occasionally the normal ileum does not begin to expel barium until food is taken.

CLINICAL MANIFESTATIONS

Deficiency states may occur at any age, from newborn infants to the aged. Andersen found atrophy of the pancreas associated with celiac disease in newborn infants, indicating that the disturbance was initiated before birth.

The clinical manifestations of deficiency states are very variable and cannot be discussed here at length. However, symptoms of some sort of digestive tract disturbance are present in most deficiency conditions.

The signs of celiac disease in infants (Fig. 2) are summarized by Andersen as (1) failure to gain weight on an adequate diet, (2) a large abdomen at birth, (3) hunger, (4) absence of diarrhea or vomiting, (5) large stools, sometimes recognized as fatty, (6) intolerance to fat, and (7) chronic infection of the respiratory tract. Andersen states that celiac disease with atrophy of the pancreas can be differentiated from celiac disease with a normal pancreas only by demonstrating the absence of pancreatic enzymes in the duodenal contents or by pathologic examination of the pancreas.

The group of primary deficiency conditions in adults usually called chronic steator-

Fig. 2—INFANTILE CELIAC DISEASE

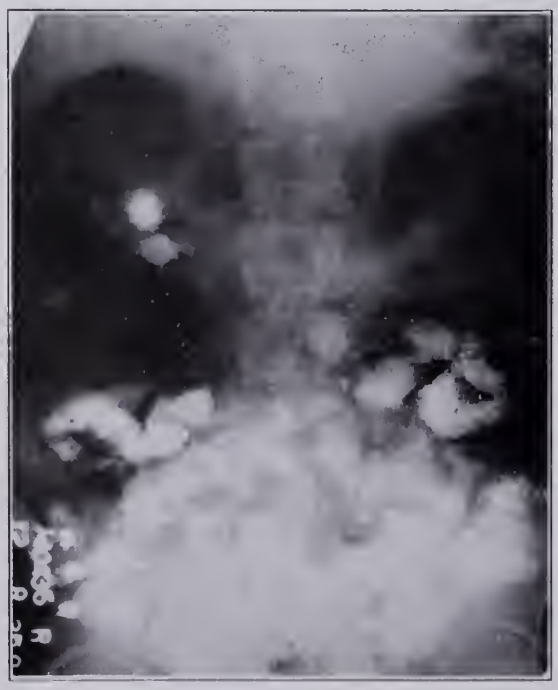
Abnormal segmentation of the middle of the small intestine with coarsening of the mucosal folds of the jejunum. (One and one-fourth hours).

Unit No. 483539: A 23 month old girl was admitted because of malnutrition. At 10 months she began to vomit without apparent cause but later improved for a while. For five weeks before admission she had a poor appetite and watery diarrhea with six to ten stools daily. Physical examination showed emaciation, abdominal distention, generalized edema, hypotonia and wasting of the muscles. The tongue was red and raw. The skeleton was markedly decalcified. Blood calcium, 8.3; phosphorus, 3.7; serum protein, 3.77. With a high protein, high vitamin diet and liver extract intramuscularly she improved rapidly and was discharged 11 weeks after admission.

Fig. 3-A—NON-TROPICAL SPRUE (Adult Celiac Disease)

Examination November 26, 1935, showed dilatation of the jejunum with absence of the mucosal folds and fluid levels. (See Figures 3-B and 3-C)

Fig. 3-B—NON-TROPICAL SPRUE (Adult Celiac Disease)



The six hour film of a small intestine study December 6, 1935, shows "flocculation" of the barium, which has not yet reached the cecum. (See Figure 3-C).

rhea, sprue, non-tropical sprue (Figs. 3-A, 3-B, 3-C), adult celiac disease, etc., is usually associated at times during the course of the disease with diarrhea with an excess of fat in the stools, with variable abdominal distress and sometimes with rapid loss of weight. In some cases of atypical deficiency conditions no diarrhea or excess of fat in the stools may be present and the symptoms may suggest some other abdominal condition, for example peptic ulcer (Fig. 4).

Fig. 3-C—NON-TROPICAL SPRUE (Adult Celiac Disease) AFTER TREATMENT

The two and one-half hour film April 26, 1940, discloses no evidence of dilatation of the jejunum. Mucosal folds are now present but are slightly coarsened. Motility is still a little slower than usual. The examination shows evidence of marked improvement in the morphology and physiology of the intestine as compared with the examinations in 1935.

Unit No. 473118: A 34 year old man was admitted because of diarrhea and loss of 25 pounds weight of two months' duration and epigastric distress relieved by induced vomiting, and intermittent chills and fever of four months' duration. Physical examination was negative except for emaciation and a protruding abdomen. The stools were light and foamy, and contained fatty acid crystals. Definite improvement appeared following two injections of liver extract. The treatment consisted of a "sprue diet" including bananas and intramuscular injec-

tions of liver. After two years the latter were discontinued and the extract was given by mouth. In 1937 he had diarrhea for three days after omitting bananas from his diet for a week. In 1940 he was perfectly well without liver extract, taking three to four bananas a day and vitamin B complex.

Fig. 4—DEFICIENCY STATE WITHOUT DIARRHEA

The six hour film discloses a gastric residue of at least one-third the barium meal, marked coarsening and irregularity of the mucosal folds of the duodenum and jejunum, uneven caliber of the small intestinal lumen, segmentation in the middle loops, and hypomotility as the barium has not yet reached the cecum. (It is difficult to select one film which gives an adequate picture of a small intestine study).

Unit No. 528757: A 29 year old woman came to the clinic complaining of epigastric and periumbilical pain of three months' duration with the loss of 20 pounds in weight. The onset occurred after a period of great anxiety. Later she had night sweats and increasing weakness. The clinician suspected the possibility of a peptic ulcer. The barium studies disclosed no evidence of peptic ulcer. The findings outlined above were interpreted as consistent with a deficiency state. Liver injections were followed by prompt improvement. Serial small intestine studies over a period of two years show that the jejunum apparently returned completely to normal but in the upper ileum markedly abnormal segmentation remains in spite of the fact that the patient is symptom free.

The symptoms of a secondary deficiency state may be entirely obscured by those of the primary condition, such as chronic peptic ulcer with gastric retention, chronic sclerosing enteritis, or chronic ulcerative colitis. On the other hand the symptoms of a deficiency state may be the only clinical manifestations of the primary disease, e. g., lymphosarcoma of the intestine (Lehmkuhl; Golden) or sclerosing mesenteritis.

In many primary deficiency states a low blood calcium is often present with demineralization of the skeleton and even tetany (Pendergrass and Comroe). In some cases the blood protein is low and may be low enough to cause edema. Hyperchromic anemia is often found, which may suggest pernicious anemia. Free HCl is usually present in the stomach. The absorption of glucose is very slow when the disease is active, as manifested by flat blood sugar curves following the ingestion of a glucose solution. By blocking a short section of the small intestine with a two-balloon Miller-Abbott tube and injecting a glucose solution into the loop thus isolated, Groen demonstrated very slow absorption by withdrawing the residual solution after a lapse of time and determining the amount of sugar remaining. It seems probable that the absorption of other materials than fat and glucose, including vitamins, may be defective. The condition of the small intestine in well advanced cases, therefore, may be part of a vicious circle which may have to be interrupted by the parenteral administration of vitamins.

ACCURACY OF DIAGNOSIS

The only proof of the accuracy of a diagnosis of a deficiency state is the patient's response to specific vitamin therapy. Often the parenteral administration of liver extract is followed by prompt improvement. One patient responded only to a banana diet. This type of proof can hardly be considered satisfactory in the scientific sense. Chemical and other types of tests for the concentration of certain specific vitamins in the blood and urine are being continuously developed but

opinion is not yet unanimous as to their reliability and significance. At present good clinical judgment seems to be the best test.

INTESTINAL PATHOLOGY

The pathologic changes in the intestinal tract in deficiency states, like the clinical manifestations, are variable both in experimental animals and in clinical cases, according to the reports in the literature. Atrophy of all of the coats of the bowel and degeneration of nerve cells in the ganglia of the intestinal wall were found by McCarrison in monkeys and pigeons which had been given a very deficient diet until they died; these animals showed striking individual variations, not only in the pathologic changes in the intestinal tract but in other organs as well. Somewhat similar findings have been observed in advanced human deficiency states, such as sprue, pellagra and beriberi, with striking individual variations. Ulcers of the small intestine may be present and may perforate (Manson-Bahr, 1924), as happened in one of our cases. Hemorrhage into the mucous membrane and into the lumen has been observed. Edema of the mucosa, of the submucosa, and atrophy of the mucosa and of the muscle coat have been found.

Very little seems to be known about the pathologic changes of the earlier stages of nutritional disturbances in adults. Even in the fatal conditions of infants with marked nutritional and intestinal disturbances the pathology of the intestine is obscure. Siegmund, in Henke and Lubarsch's Handbook of Pathology, takes nearly a page to discuss the difficulty in the differentiation of postmortem changes and artefacts from the true picture of the pathologic process. In 49 necropsy cases of atrophy of the pancreas in infants and children with clinical evidence of celiac disease Andersen described no abnormality of the intestine. It seems peculiar that such marked clinical and röentgenologic evidence of intestinal disturbances should be present without pathologic changes in the wall. Probably special methods of investigation are necessary to demonstrate early or relatively slight histologic changes which may be of profound physiologic importance. For example, the study of the intramural nerve cells, which undoubtedly play a part in intestinal physiology, requires special preparation of specimens. At the present time a satisfactory correlation of the disturbances demonstrable by x-ray and the pathologic findings, or the lack of them, is impossible.

ROENTGEN RAY MANIFESTATIONS

The abnormalities of form and movement found on x-ray examination of the small intestine in deficiency states appear to be different in different stages of the disease, and even in the advanced cases they are variable. They may be conveniently assembled in three groups.

1. Motility:

A. Hypermotility, apparently in the earlier stages.

B. Hypomotility, in the advanced stages (Figs. 3-A, 3-B).

C. Dilatation, particularly in the jejunum in the advanced cases (Fig. 3-A).

D. Abnormal segmentation, that is, elongated areas of contraction, suggesting spasm, between which the lumen may be normal in caliber or larger. The contractions may be so marked that no barium remains in the contracted areas, giving the effect of scattered separated boluses (Fig. 5-B).

2. Mucous Membrane:

A. Coarsening of the mucosal folds, particularly in the duodenum and jejunum, meaning that they are wider, lower, and farther apart and, therefore, fewer in number (Fig. 5-A).

B. Obliteration of the mucosal folds in the advanced cases, producing a smooth wall (Fig. 3-A).

3. Flocculation of the Barium Shadow:

This is a coarsely granular appearance as if the aqueous suspension of barium sulphate were coarsely emulsified with some nonmiscible fluid; it seems more likely to be present in the advanced cases (Fig 3-B).

In well marked cases of primary deficiency states hypomotility of the stomach is fre-

quently found (Fig 4). It is manifested by a six hour gastric residue, unexplained by ulcer or pyloric obstruction, with sluggish ineffective peristalsis, and often with antral spasm. This may play a part in the production of flat blood sugar curves by delaying the expulsion of the ingested glucose solution into the small intestine where absorption takes place. With effective treatment the emptying of the stomach becomes normal.

Fig. 5-A—DEFICIENCY STATE APPARENTLY ASSOCIATED WITH AMEBIC DYSENTERY

The mucosal folds of the jejunum are coarsened and widely separated, and the lumen is uneven in caliber. (One and one-half hours).

EFFECT OF TREATMENT

Snell and Camp (1934) remarked that the appearance of the small intestine changes toward the normal as a result of treatment of chronic steatorrhea. Snell (1939) states that proper treatment may be followed by a complete restoration to the normal in appearance. We have not as yet seen this happen in a case of well developed steatorrhea (Fig. 3-C). Treatment of deficiency conditions in the earlier stages, however, may be followed by a return to normal as far as the appearance of the barium shadows is concerned.

Fig. 5-B—DEFICIENCY STATE APPARENTLY ASSOCIATED WITH AMEBIC DYSENTERY

Typical segmentation is present in the middle and lower loops of small intestine with slight flocculation of the barium. (Three hours).

Unit No. 523056: A 41 year old business man, a resident of Mexico City for two and one-half years, one month before admission had a chill, headache, weakness and a slight fever for two days. Then followed severe diarrhea—40 stools a day—with lower abdominal cramps, rectal burning and tenesmus. His local doctor reported the stools to be swarming with amebæ. The administration of emetine was followed immediately by cessation of pain but the diarrhea persisted. He lost 14 pounds in a month. The stools were pale and contained much neutral fat and no amebæ. Barium enema and proctoscopic examination disclosed nothing abnormal. The hemoglobin, blood protein and calcium were normal. Basal metabolism was -21. The small intestine study, illustrated above, was interpreted as consistent with a deficiency state. With the administration of liver extract and vitamin B complex the diarrhea rapidly diminished and the patient became symptom free. It would seem probable that the deficiency state was precipitated by the acute amebic dysentery, which was thought to be responsible for the continuation of the diarrhea until the small intestine study disclosed evidence of a deficiency state.

A study of our cases shows that the ability of the small intestine to return to normal depends in part upon the duration of the trouble. It would seem that permanent irreversible changes occur if the condition exists long enough. The upper part of the small intestine seems to show earlier and more marked improvement than the lower. Segmentation may persist in the proximal ileum after the jejunum appears normal.

Re-examination of the small intestine at intervals after the institution of treatment is very instructive. The residual abnormalities may give a clue to the appearance to be expected in the earlier or milder cases. In many instances objective improvement in the small intestine lags far behind clinical improvement.

DIFFERENTIAL DIAGNOSIS

The well-advanced changes in the small intestine—dilatation, smoothing of the wall, hypomotility, marked segmentation — have been observed in all forms of primary deficiency states, in hypoproteinemia, and in deficiencies produced by primary disease of the mesentery. The changes characteristic of the earlier stages—hypermotility, coarsening of the mucosal folds, hypertonicity and segmentation—can be produced in all of the above-mentioned conditions. They have been seen with tuberculous mesenteric lymphangitis and lymphadenitis. In one case temporary segmentation appeared when a patient became nervous and upset. Segmentation was described by Mills (1922) as the result of multiple peritoneal adhesions, but these segments, in my experience, are short and the mucosal folds are normal in size and distribution; the limitation in mobility of the intestinal loops can be easily demonstrated by palpation under the fluoroscope.

In true pernicious anemia the small intestine pattern is normal.

At the present time a differential diagnosis of the type and the cause of a deficiency state based on the appearance of the intestine cannot be made.

COMMENT

As more attention is paid to the small intestine in routine gastrointestinal examinations it becomes increasingly apparent that these small intestinal changes are recognizable in patients whose symptoms do not suggest any of the previously mentioned deficiency conditions. In a number of our cases the first suggestion that the patient might have a deficiency state came from the x-ray examination. These changes are frequently found in association with common, easily recognized diseases of the gastrointestinal tract. The importance to surgeons of the recognition and correction of nutritional deficiencies is attested by the number of articles dealing with this topic in recent surgical literature.

Many workers on pellagra, sprue and beriberi have pointed out that indefinite abdominal symptoms very frequently occur early in the course of the disease before its outstanding characteristic manifestations appear and before a clinical diagnosis can be made. Experience thus far seems to justify the assumption that a properly done röentgen examination of the intestinal tract in the early stages of these diseases would in many cases disclose disturbances in the small intestine and thus assist in drawing attention to the possibility of a deficiency state before serious damage is done.

CONCLUSIONS

Diseases in which nutritional deficiency plays either a primary or a secondary rôle are relatively common. They are associated with disturbances in the physiology and morphology of the small intestine which are demonstrable by röentgen methods of examination. These disturbances are best demonstrated by special examination of the small intestine but often appear as a by-product of a routine gastrointestinal examination for disease of the stomach or duodenum. They are recognizable not only in advanced but also in early cases. A satisfactory explanation of the mechanism of their production is not available at present.

Although a differential diagnosis cannot be made, the detection of these intestinal disturbances may serve to call attention to the presence of a deficiency state in cases in which the clinical picture is obscure.

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Hearing Handicaps

Children may have serious hearing handicaps for years without knowing it, Constance J. Foster, New York, points out in *Hygeia, The Health Magazine* for December.

"Never having heard normally," she explains, "the child has a poor basis for comparing himself with other children and fails to realize why he is different. He may learn to compensate for his deficiency by cleverly increasing the alertness of other senses, so that the parent is deceived, is even unaware of any defect."

Some of the symptoms which should be regarded as suggestive of ear difficulty include dullness, heaviness or a blocking sensation in the ears persisting for more than a few minutes, hearing better than others in noisy places, marked language retardation, asking frequently for the repetition of words and phrases, confusing similar sounds, distortion of speech out of proportion to the child's age, constant buzzing in the ears, vertigo or dizziness and failure to respond when called or to locate the source of sound properly. Other symptoms include headaches, fever, sweats, chills, acidosis, vomiting and coma, otherwise unexplained; tenderness, itching, heat or pain, deformities or swellings in or about the ears; moisture or discharge, running or odor from the external ear canal; facial spasm or paralysis, and allergic and neurologic symptoms correlated to any of the above manifestations.

"Other than congenital defects, most hearing difficulties can be prevented if the troubles from which they arise are recognized promptly and treated at their source," Mrs. Foster says. "Most of the difficulty begins after infancy when the child is free to wander for the first time beyond the immediate protection of home and nursery. He is more exposed to colds and drafts, more at the mercy of inclement weather and infectious diseases. For the small child who has shown a predisposition to nose and throat infections, the nursery school is of questionable advantage.

"Regular and adequate hours for sleep, study and play, and the avoidance of crowds are sound preventive measures."

WATER BALANCE*

By JOHN S. PEARSON, M. D.
Bluefield, West Virginia

DURING the past decade, biochemical studies involving such problems as acidosis, alkalosis, edema, hypochloremia, etc., have emphasized the part water plays in the regulation of normal metabolism and have clarified the physiological factors involved in water exchange within the body. From these studies has arisen the concept of water balance, by which is meant the ratio between the total intake of water by ingestion by all possible means and the total excretion of water by all routes, including the kidneys, lungs, skin, bowel or any abnormal route such as biliary and intestinal fistulæ, etc. Any rational management of fluids both before and after operation must be planned on this basis. Each case should be considered individually with respect to individual requirements to balance intake and output with regard to the manner of administration, and the nature of the fluid to be given.

The problem of furnishing adequate fluid supply is not limited to the postoperative period. The patient with a chronic surgical condition is nearly always dehydrated. Many patients with acute abdominal conditions accompanied by vomiting have lost so much fluid that the added loss during operation and in the immediate postoperative period brings about a decided negative water balance. The dehydrated patient is a poor surgical risk and operation should always be postponed until the fluid deficit is overcome.

Before considering water balance in abnormal conditions it is essential to touch upon the physiological factors involved in water metabolism and salt metabolism which are the two chief components of water balance.

*Read before the staff, St. Mary's Hospital, Huntington, West Virginia, January 21, 1940.

THE AUTHOR

Dr. Pearson, graduate University of Virginia School of Medicine, 1939; interned St. Mary's Hospital, Huntington; recently located in Bluefield.

WATER METABOLISM

In health water is ingested by mouth and absorbed by the gastrointestinal tract. It is lost by vaporization, urination and in the stool. As the body needs more water, the sensation of thirst reminds one to take more fluid. The fluid absorbed is contained in three reservoirs—the blood, the interstitial areas between the cells, and the cells themselves. The fluid of the blood comprises nine per cent of the body weight, that in the interstitial areas, 16 per cent of the body weight and the cells contain fluid comprising 45 per cent of the body weight. The sources of body fluid are (1) water ingested, (2) food ingested, and (3) oxidation of body material.

As expected, the greatest volume of water is taken by mouth, which normally varies from 800 to 3,000 c.c. daily, being greatest during warm weather. Men working in the canyon, building the Boulder Dam, where the temperature was as high as 120 degrees Fahrenheit, drank as much as 10,000 to 18,000 c.c. of water daily.[1] In such instances, the salt loss is excessive and must be replaced, a problem the industrial medical directors are solving.

The second source of water is from food, since about 70 per cent of its weight is water. Coller and Maddock found the regular house diet at the University of Michigan Hospital to yield about 1,000 c.c. of water; the soft diet about 500 c.c. daily.[2]

The third source of body water is from the oxidation of body tissue. The oxidation of

one gm. of protein yields 0.4 gm. of water; of one gm. of carbohydrates, 0.6 gm., and of fat, 1.07 gm. This source is responsible for from 200 to 400 c.c. of water daily and in starvation as much as 500 c.c. of water becomes available.[1] The combined water content of solid food ingested and as a by-product of oxidation amounts of 0.9 gm. of water for each gram of solid food eaten.

The loss of water from the body is from three sources, i. e., vaporization, urination, and in the stool. The skin and lungs dissipate body heat by vaporization. This process is continuous in that there is always some vapor in the breath and on the body surface. This insensible loss of body fluid amounts to 1,000 to 1,500 c.c. daily.[3] It is an interesting and important fact that this insensible water loss is not affected by the amount of water available. Thus vaporization has priority over the kidneys on water available.

The kidneys on the other hand are markedly affected by the amount of available water. They excrete the waste material presented to them in the water left after other processes have been cared for. Thus, there may be a large daily output of urine of low specific gravity or vice versa. In general, an adequate output of urine is indicative of an adequate fluid intake, i. e., water balance. However, this does not mean a proper salt metabolism. A small urine volume of high specific gravity usually means insufficient water intake, while excessive quantity of urine of low specific gravity usually means an excessive fluid intake.

A standard of 35 gm. of waste material daily has been accepted for the average adult. Lashmet and Newburgh[4] determined the excretory capacity of the kidneys in health and disease. They found that persons with normal kidneys require a urinary output of only 500 c.c. if they concentrate to maximum capacity, while severely damaged kidneys with low concentrating capacity require nearly 1,500 c.c. of urine to excrete the same amount of solids.

In disease, it is safer to assume that the kidneys have only a low concentrating ability and to strive for a minimum output of 1,500 c.c. of urine daily. Thus the hydration or dehydration of the patient is easily checked by determining the urinary output, if the salt metabolism is normal.

Water lost in the normal stool is negligible. An average of only 150 c.c. of water is lost daily by this route. Obviously in cases of diarrhea the fluid loss by means of the stools may become alarming.

SALT (SODIUM CHLORIDE) METABOLISM

Water balance cannot be divorced from sodium chloride metabolism because the loss of this electrolyte is dependent on water to carry it away in solution. The normal daily salt requirement may be said to be 4.5 gm.[1] This salt intake must be greatly increased in normal people working under abnormal conditions where there is excessive salt loss, as in stokers, steel furnace workers, etc.

Sherman[5] has estimated the total salt content of the body as 0.15 per cent of the body weight expressed as chlorides or 0.24 per cent of the body weight expressed as sodium chloride. The total sodium chloride content of a 60 kg. person would be 148.8 gm.

Sodium chloride has two main body functions. As an electrolyte it aids in maintaining the acid base balance of the body by its sodium and chloride ions. Its other function is to aid in the distribution of body fluids and the regulation of their amounts by its influence on osmotic pressure.

Salt balance in a healthy individual is of no practical significance. The chloride content of the blood expressed as sodium chloride is 450 to 500 mg. per 100 c.c. of blood. The average person ingests daily from eight to 12 gm. of salt. About two per cent or 0.2 gm. is excreted in the feces, 0.24 to 0.41 gm. is lost through the skin in sweating, and the balance, after being used for body requirements is excreted by the kidneys. In health, excessive amounts of salt are removed in the urine but in disease it may be retained with

water, resulting in edema. This causes a hydremia and not a hyperchloremia.[6]

An inadequate salt intake gives rise to a different situation as the normal amount of chlorides is excreted daily for several days at least. This causes first a fall in blood chlorides, hypochloremia, and second, a depletion of the body chlorides in general. This is often followed by an alteration in the acid base balance, and commonly there is an increase in the blood non-protein nitrogen as a later manifestation.[7]

In cases of loss of chloride ions, for example, in long continued gastric aspiration or vomiting, the chloride ion loss is compensated by an increase of the bicarbonate ion, causing an alkalosis with an increased CO^2 combining power of the blood.

The body has no substitute for the excessive loss of the sodium ion, and acidosis results with a lowered blood CO^2 combining power. Only the replacement of the sodium ion will correct the condition.

An equal loss of sodium and chloride ions will not change the acid base relationship, but dehydration will occur. Dehydration occurs in the body's effort to maintain the sodium concentration and the osmotic pressure at a constant level. If the salt loss and its accompanying water loss continue, eventually it is more important for the body to retain water than to maintain a constant sodium chloride level, and then the blood chlorides fall. Bartlett[7] and his co-workers believe that the non-electrolyte urea is retained to maintain the osmotic pressure.

BARTLETT'S FORMULA

Bartlett's formula for determining the salt requirement of any individual patient is based on Sherman's determination of the normal body content of salt being 0.24 per cent of the body weight.

The formula is:

$$\text{Gm. of salt needed} = \frac{450 \text{ (actual blood chlorides)} \times 2.48 \times \text{kg. of body weight}}{450}$$

From this formula, a simple clinical rule was formulated: For each 100 mg. that the whole blood chlorides need to be raised to reach the normal (450 mg.), the patient should receive 0.6 gm. of sodium chloride per kg. or 0.25 gm. per lb. of body weight.

Example: Sixty kg. man with blood chloride of 350 mg. per cent require 36 gm. of salt to raise the chloride to a normal of 450.

$$\frac{100 \times 0.6 \times 60.}{100} = 36.0$$

DEHYDRATION

The presence of dehydration can be determined by simple clinical observation. The sunken facial expression, dryness of buccal mucosa and the tongue, turgidity of the skin, marked subjective thirst, all are the familiar signs. The temperature may be elevated due to inability of the sweat glands to excrete enough perspiration to control body temperature. A clinical test of dehydration is the McClure-Aldrich test,[8] consisting of the injection of 0.2 c.c. of normal saline intradermally and timing its disappearance. With normal hydration the wheal so formed will disappear in about 55 minutes—disappearance in less time indicates dehydration. Laboratory corroboration of dehydration is afforded by a concentrated urinary output, a high non-protein nitrogen content of the blood, a relatively high red cell count and hemoglobin content, increased concentration of the plasma protein (normal 7.5 gm. per 100 c.c.) and decrease in the plasma volume (normal .50 c.c. per kg. of body weight). All these findings indicate that the interstitial and intracellular reserves have been heavily called upon, and that a dangerous degree of dehydration has been reached.

Neither clinical nor laboratory pictures of marked dehydration should be observed in postoperative period. This is accomplished by carefully recording the amounts of all abnormal losses such as emesis, biliary drainage from enterostomy tubes, etc. To these is added the estimated amount of insensible loss plus a desired urinary output of 1,500 c.c. For instance, we have a patient who has been operated on for common duct stone. It is 24 hours after operation. During this time 350

c.c. of bile has drained from the tube in the common duct. During the first few hours after operation, he vomited an amount estimated at 250 c.c. His insensible loss is estimated at 2,000 c.c. A urinary output of 1,500 c.c. is desired. We then have:

Bile drainage	350 c.c.
Vomitus	250 c.c.
Insensible loss	2,000 c.c.
Urine	1,500 c.c.
Total	4,100 c.c.

Which represents the amount of fluid to be given during the next 24 hours, if water balance is to be maintained.

Of equal importance with the amount of fluid is the nature of the fluid to be furnished and the route by which it will be administered. Fluid by mouth is naturally the most physiological method and if possible this route should be chosen for the administration of as much of the fluid intake as possible. However, after many major operations, it is necessary to withhold fluid by mouth, or the amount which the patient is able to take by mouth may be inadequate to fulfill the need for fluid. In such instances the oral route must be supplemented or entirely replaced by one of the parenteral methods. These methods include proctoclysis, hypodermoclysis, and intravenous infusion.

As to the types of fluids that may be used, water, of course, is the simplest that may be administered by mouth and it is the vehicle of all solutions taken into the body. Tap water may be given by rectum.

SALT SOLUTIONS

Physiological saline solution, Ringer's solution or Hartman's solution are all isotonic. Since physiologic saline solution is 0.85 per cent salt in distilled water it contains 8.5 gm. of NaCl per liter. A patient receiving 3,500 c.c. of such solution receives approximately 30 gm. of NaCl or seven times the average daily requirement of 4.5 gm. Maddock and Coller found that salt metabolism in disease is not the same as in health and that excessive quantities of salt in solution cause retention of water in tissues. They also found that five per cent glucose in saline was retained while patients receiving five per cent glucose in distilled water did not retain water in the tissues.

A five per cent solution of glucose in distilled water is isotonic. This is our best method of giving fluid parenterally without the introduction of an electrolyte to upset the water balance. The water exchange when isotonic glucose solution is given is the same as if fluids were given by mouth. Thus a patient requiring 3,500 c.c. of water in 24 hours would best receive this as 1,000 c.c. of normal saline and 2,500 c.c. of five per cent glucose in distilled water. A 175 pound (80 kg.) man can tolerate up to 1,280 c.c. of five per cent glucose per hour without spilling sugar into the urine.

Hypertonic solutions, such as 10 per cent glucose are occasionally justifiable, but such cases are exceptions and not the rule. In patients with hyperthyroidism or liver damage 10 per cent glucose in distilled water is often the solution of choice.

Often five per cent glucose is put up in normal saline. This violates a principle of physiology in that a patient receiving such a mixture is getting a hypertonic solution.

A combination of salt and glucose lead to the intake of unnecessarily large quantities of salt which cannot be removed by the sick patient and lead to edema.

If such a combination is desired, an isotonic solution is preferable consisting of 0.425 per cent NaCl and 2.5 per cent glucose.

Blood transfusions and gum acacia solution should be reserved for shock, hemorrhage, severe anemia, and edema from protein loss.

SUMMARY

1. Water metabolism and salt metabolism are the chief factors in water balance.

2. No water is available to the kidneys until the requirements of vaporization are satisfied.

3. Normal kidneys need a urinary output of only 500 c.c., if they concentrate to max-

imum capacity, while severely damaged kidneys with low concentrating capacity require nearly 1,500 c.c. of urine to excrete the same amount of solids.

4. The average daily sodium chloride requirement of an adult is about 4.5 gm.

5. The loss of the chloride ion causes an alkalosis. The loss of the sodium ion causes an acidosis.

6. The parenteral administration of fluids during the course of operations is a rational procedure.

7. A simple test of hydration is to measure the 24 hour urinary output, which should approximate 1,500 c.c.

8. Another test presented is the McClure-Aldrich test of hydration.

9. The clinical rule of Bartlett is presented.

10. The indiscriminate use of hypotonic and hypertonic solutions is to be condemned. The routine use of five per cent glucose in saline is not physiologic in principle.

11. The average patient who is unable to take fluids by mouth should receive 500 to 1,000 c.c. of physiologic saline solution. The balance of the water requirement should be given as five per cent glucose in distilled water.

12. Patients with hyperthyroidism and liver damage may be given 10 per cent glucose in distilled water.

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THE PHYSICIAN AND THE NEW FEDERAL FOOD, DRUG AND COSMETIC ACT

By J. LESTER HAYMAN, Ph. C., M. S.*
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For many years the revision of the Federal Pure Food and Drug Act of 1906 was desired in the interest of public health. Many attempts were made to revise this law but it required the incident regarding the "Elixir of Sulfanilamide", which cost the lives of a number of people, to bring forcibly to the attention of Congress the necessity for such revision. The accomplishment, however, was realized in the passage of the New Federal Food, Drug and Cosmetic Act of 1938 which became effective in all of its provisions on July 1, last. The members of the various branches of the medical profession must realize that this law was passed in the interest of the public health and for the protection of the public rather than for any particular benefit its passage might give to the members of the medical and pharmaceutical professions.

THE AUTHOR

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The law as a whole is very complicated and the regulations under the law are intricate. New fields have been included under the provisions of the Act to cope with conditions needing correction. The law and the regulations strictly govern the handling of drugs and in a manner quite different than was the case before the enactment of the new law, and

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incidentally quite different from the expectations of many of those practicing medicine and pharmacy. However, regardless of what the opinion may be of the individuals who practice medicine and pharmacy, the law has been passed by Congress and is now in full effect.

REGULATIONS

Regulations have been issued governing the enforcement of the Act which are equally effective as the law itself. Many citations have been issued giving the opinions of the enforcement department in regard to the law. It is with the thought of bringing some of these provisions to the reader, as they affect the practice of many physicians, that this article is written.

At the outset, it is perhaps well to emphasize that the enforcement officials base certain regulations and opinions on the assumption that interstate commerce, insofar as this law is concerned, includes all drugs which at any time have been in interstate commerce. If this opinion is sustained, it is probably true that 99.9 per cent of all drugs manufactured or used come under the provisions of the Federal act under discussion. Adequate space does not permit a full discussion of the provisions of the law as it pertains to drugs. An attempt will, however, be made to point out some of the important provisions.

A drug is deemed to be misbranded under several conditions, a few of which are included in the following portions of the law:

"Sec. 502. A drug or device shall be deemed to be misbranded—

"(a) If its labeling is false or misleading in any particular. * * *

"(d) If it is for use by man and contains any quantity of the narcotic or hypnotic substance alpha eucaine, barbituric acid, beta-eucaine, bromal, cannabis, carbromal, chloral, coca, cocaine, codeine, heroin, marihuana, morphine, opium, paraldehyde, peyote, or sulphonmethane; or any chemical derivative of such substance, which derivative has been by the Secretary, after investigation, found to be, and by regulations designated as, habit forming; unless its label bears the name, quantity, and percentage of such substance or derivative and in juxtaposition therewith the statement 'Warning—May be habit forming.'

"(e) If it is a drug and is not designated solely by a name recognized in an official compendium unless its label bears (1) the common or usual name of the drug, if such there be; and (2), in case it is fabricated from two or more ingredients, the common or usual name of each active ingredient, including the quantity, kind, and proportion of any alcohol, and also including, whether active or not, the name and quantity or proportion of any bromides, ether, chloroform, acetanilid, acetphenetidin, amidopyrine, antipyrine, atropine, hyoscine, hyoscyamine, arsenic, digitalis, digitalis glucosides, mercury, ouabain, strophanthin, strychnine, thyroid, or any derivative or preparation of any such substances, contained therein: *Provided*, That to the extent that compliance with the requirements of clause (2) of this paragraph is impracticable, exemptions shall be established by regulations promulgated by the Secretary.

"(f) Unless its labeling bears (1) adequate directions for use; and (2) such adequate warnings against use in those pathological conditions or by children where its use may be dangerous to health, or against unsafe dosage or methods or duration of administration or application, in such manner and form, as are necessary for the protection of users: *Provided*, That where any requirement of clause (1) of this paragraph, as applied to any drug or device, is not necessary for the protection of the public health, the Secretary shall promulgate regulations exempting such drug or device from such requirement.

"(j) If it is dangerous to health when used in the dosage, or with the frequency or duration prescribed, recommended, or suggested in the labeling thereof."

EXEMPTIONS

Certain exemptions are made in the foregoing paragraphs concerning the misbranding of drugs which are as follows:

"Sec. 503 (a) The Secretary is hereby directed to promulgate regulations exempting from any labeling or packaging requirement of this Act drugs and devices which are, in accordance with the practice of the trade, to be processed, labeled, or repacked in substantial quantities at establishments other than those where originally processed or packed, on condition that such drugs and devices

are not adulterated or misbranded under the provisions of this Act upon removal from such processing, labeling, or repacking establishment.

"(b) A drug dispensed on a written prescription signed by a physician, dentist, or veterinarian (except a drug dispensed in the course of the conduct of a business of dispensing drugs pursuant to diagnosis by mail), shall if—

"(1) such physician, dentist, or veterinarian is licensed by law to administer such drug, and

"(2) such drug bears a label containing the name and place of business of the dispenser, the serial number and date of such prescription, and the name of such physician, dentist, or veterinarian, be exempt from the requirement of section 502 (b) and (e), and (in case such prescription is marked by the writer thereof as not refillable or its refilling is prohibited by law) of section 502 (d)."

MISBRANDED DRUGS

In the foregoing quotation concerning exemptions from the law, it is quite evident that Congress gave consideration to the exemptions of drugs dispensed on physicians' prescriptions but it will be noted that no exemption whatsoever was given from the requirements of section 502 (f) or (j) which make a drug misbranded when it is dangerous to health when used in the dosage or with the frequency or duration prescribed, recommended or suggested in the labeling thereof, or if it does not have adequate directions for use. In other words there is no exemption in the law for drugs dispensed upon a prescription from bearing, first, adequate directions for use and, second, such adequate warnings against probable misuse as may be necessary to protect the user. In regard to this, a citation issued on September 5, 1940, reads:

"However, what constitutes adequate directions for use and adequate warnings against probable misuse on the labels of prescriptions may be much less than what would be adequate on drugs sold under other conditions. Certainly, it may be assumed that the prescribing physician has given orally full directions for use and any warnings against probable misuse that the situation may require. It would seem that the Act requires some directions for use, however sketchy they may be, but that ordinarily it would not require label warning against misuse because presumably the physician will have given such warnings orally and they will not be necessary on the label to protect the user. However, if a drug is dispensed in such form and manner and under such labeling as will enable the user to repurchase the article and continue to use it indefinitely and recommend it to friends, obviously then under such circumstances only such directions for use and warnings will be adequate which will in themselves fully protect the consumer."

LABELS

Under the exemptions quoted in section 503 (b) drugs dispensed upon the prescription of a properly licensed physician, dentist, or veterinarian is exempt from many of the provisions of labelings and warnings only when such drug bears a label containing the name and place of business of the dispenser, the serial number and date of such prescription and the name of such physician, dentist, or veterinarian. The citation of September 5, 1940, interpretates:

"* * * the purpose of Congress in referring to a serial number in section 503 (b) was to provide a means by which the drug dispensed could be accurately tagged and identified in the event that any question concerning the drug or the prescription arose. This presumes that the dispenser either retain the physician's prescription, as is ordinarily done, or a satisfactory record of the prescription. While we doubt that Congress intended that the physician should fill out his ordinary prescription blank to himself when he dispenses the drug, nevertheless in lieu of this the physician shall retain in his possession a record of the article prescribed and dispensed which is linked to the drug through the serial number, date and name of the physician which appears on its labeling. This record kept by the physician will, we believe serve as his prescription to himself and satisfy the intent of Congress."

It may be well to point out that some physicians use the words "As Directed" in lieu of directions to be placed upon the label of the medicinal. It is obvious that this does not meet the requirement of adequate directions for use upon the label and such directions would require the following labeling requirements: the name and address of the dispenser, an accurate statement of the quantity of contents, warning statements as to habit forming if necessary, the names of the active ingre-

dients, and if it contains any of the drugs enumerated in section 502 (e), the quantity of each as well as adequate directions for use. It may be seen, therefore, that it would be difficult for a pharmacist to dispense medicinals upon a physician's prescription when the directions are given merely as "As Directed."

In order that there may be a correct understanding between the physician and the pharmacist, the Federal Government holds the manufacturer and dispenser liable for the distribution of any drugs which may be dangerous to health (502 [j]). The enforcement department has, however, in various citations specifically named certain drugs which they deem to be dangerous. The drugs which have been named as such thus far are given in the following list:

DRUGS DESIGNATED AS DANGEROUS

Aminopyrine; ammoniated mercury ointment, if over five per cent ammoniated mercury; aspidium; barbiturates; benzedrine sulfate; carbon tetrachloride; chenopodium oil; cinchophen; digitalis; mercuric chloride ointment, if over 0.2 per cent mercuric chloride; neocinchophen; santonin; squill; strophanthus; sulfanilamide; sulfapyridine; sulfathiazole; tetrachlorethylene; thymol; thyroid; acetanilid, if the total daily dosage is more than five grains or more than two and one-half grains during any three hour period; bromides, if in a total daily dosage of more than 30 grains or more than 15 grains during any three hour period; combinations of bromides and acetanilid, if in total dosage of more than 15 grains of bromide and five grains of acetanilid or more than seven and one-half grains of bromide and two and one-half grains of acetanilid during any three hour period.

The drugs enumerated in the foregoing list, as well as other drugs dangerous to health should be dispensed only on a prescription of a physician, dentist, or veterinarian. Such prescriptions should be plainly marked "Do Not Refill."

"However on the specific authorization (written, verbal or telephone) of the prescriber such prescription may be refilled a 'reasonable number of times.' (It is strongly recommended that such prescription not be refilled more than two [2] times unless a new prescription is written by the prescriber. The pharmacist assumes the full responsibility for refilling such prescription).

"When refilling on physicians authorization, date and hour and conpounder's name should be recorded on the back of the original prescription or prepare and file a new prescription indicating on the prescription that it represents the first or second refilling of the original order. Such records are necessary when refilling on verbal authorization but are not necessary if you receive a new prescription written by the attending physician."

In view of the above the physician should cooperate with the pharmacist in refraining from recommending to patients that they purchase dangerous drugs and in regard to the refilling of prescriptions either by plainly marking the prescription "Not to be Refilled" or by courteously giving the proper information when contacted concerning refills.

It is hoped that the information contained herein may be of material assistance to physicians in complying with the Federal Food, Drug and Cosmetic Act.

Cancer Incidence

Much care must be exercised in accepting suggested new methods for determining the relationship of the incidence of cancer to various external and internal factors, *The Journal of the American Medical Association* for December 21 says.

"Many external factors affect the incidence of cancer," *The Journal* explains. "Among those recently discussed are climate, exposure to the elements, especially sunlight, and geographic location. Now Albert Tannenbaum, M.D., presents experimental and statistical evidence on the relation of body weight to the development of cancer. In both animals and man individuals of average or less than average weight are not as likely to develop cancer as those who are overweight, he believes. This tentative conclusion requires careful checking, and the establishment and maintenance of weight levels with a view to the prevention of human cancer can as yet be considered only as an experimental procedure."

CHEMOTHERAPY IN THE PRACTICE OF EYE, EAR, NOSE AND THROAT*

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A GREAT deal has been said and written about sulfanilamide and its derivatives, prontosil (later neoprontosil) and sulfapyridine. The feeling that the new type of chemotherapy is a remarkable aid is both universal and unanimous. It would seem that the eye, ear, nose and throat men are getting dramatic results on many of their patients, and no wonder—the new drugs are specific against hemolytic streptococci, pneumococci, gonococci and the filterable virus of trachoma!

In otorhinology, in about 90 per cent of acute otitis media the invading bacteria are either streptococci or pneumococci (mostly the former). Many cases of meningitis are of otitic origin. Almost the same may be said of virulent acute sinusitis.

In ophthalmology, West Virginia is one of the very few states still having numerous cases of trachoma. Therefore, we should be particularly interested in this eye problem. Gonorrheal ophthalmia in the newborn as well as in the adult, is still seen from time to time. In most of the serpiginous ulcers of the cornea the pneumococcus is the offending micro-organism.

Bellows and Chinn in their studies on the distribution of sulfanilamide within the ocular tissues of dogs (when administered through a stomach tube) found that the drug could be detected within all ocular tissues and fluids within fifteen minutes following administration. After a single massive dose by mouth the maximum concentration of sulfanilamide in the eye was found to have been reached about the sixth hour. (This is significant and, accordingly, I prescribe the drug in eye conditions to be taken by the patient every six instead of every four hours. Thus there is less hardship on the part of the patient taking the drug during the night hours). Heat, atropine and physostigmine applied locally had no effect on the sulfanilamide concentration.

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Loe used sulfanilamide in a series of cases of trachoma in Indians. Two patients were given daily doses of one-third gr. per pound of body weight for ten days. The dose was decreased to one-fourth gr. per pound for 14 additional days. There was definite improvement within five days and an apparent cure within one month. Neither patient has shown any signs of recurrence. At a later date thirteen trachomatous patients were selected for sulfanilamide treatment. (These patients had been under continuous treatment for trachoma from one to seven years). Three of these were dismissed ten days later, apparently cured. The remaining ten were greatly improved after eight days and dismissed two weeks later, apparently cured. Then 140 patients were placed on sulfanilamide treatment. They all responded just as dramatically.

Hatschek treated 203 cases of trachoma with sulfanilamide. He concludes that prontosil is the most effective sulfanilamide preparation in the treatment of trachoma, when given both intramuscularly and orally. Because of its low toxicity it can be given in high dosage without any ill effects, a circumstance of great importance, since severe forms of pannus are prevalent in the orient.

Spearman and Vandevere report two cases

*Read before the Medical Journal Club of Charleston, West Virginia, April 15, 1940.

of trachoma treated with sulfapyridine, seven and one-half grs. every four hours. Striking remissions of pathologic signs were obtained in both cases in two and five weeks respectively. Vision was also greatly improved.

The eight cases of trachoma I have treated with both sulfanilamide orally and neoprontosil intramuscularly, also subconjunctivally, have all responded in a similar spectacular fashion. They all showed cessation of lacrimation and loss of photophobia within 48 hours. Seven of these patients had well formed pannus. All showed improvement in vision after one week of treatment. Opacity began clearing within two weeks. Within the same period there was also considerable paling of trachomatous patches and flattening of granules and follicles. In five patients who had had no scarring, the conjunctiva was practically normal at the end of six weeks. One case had corneal ulceration. At the end of twelve days the ulcer was completely healed.

While thus far there have been no relapses, it would be impossible to prognosticate how permanent or lasting a cure these formerly unfortunate patients are going to have. The experience is too recent. The patients should and will be checked from time to time. It is, however, quite safe to state that we now have a very powerful weapon against trachoma, such as we have never had before.

SERPIGINOUS CORNEAL ULCERS

I also wish to report three cases of serpiginous corneal ulcers I have treated with sulfapyridine, seven and one-half grs. every four hours. Two were completely well within four days. The third patient took an additional day for complete recovery. The offending micro-organism in all three cases was a pneumococcus. In two of the three cases I had to perform corneal paracentesis. One patient was also given foreign protein therapy. All had local application of atropine, dionine and heat.

While I always have had excellent results in treating gonorrheal ophthalmia, especially early cases, with foreign protein therapy, in addition to local care, the adult case I recently treated with both foreign protein therapy and sulfanilamide had a decidedly shortened course and no complications. The infection was unilateral. The eyelids were extremely edematous with copious discharge. A smear was positive. The cornea, however, was not ulcerated. Immediately sulfanilamide orally and neoprontosil intramuscularly were given, as well as foreign protein therapy and local care. Both the edema and the discharge were markedly decreased at the end of 24 hours. At the end of 48 hours smears were negative and the cornea could be exposed with ease. At the end of three days the eye was practically normal.

SULFANILAMIDE AND NEOPRONTOSIL

In July, 1939, I reported 47 cases of acute otitis media treated with sulfanilamide and neoprontosil. The offending micro-organism in 45 of these cases was a hemolytic streptococcus and in two, pneumococcus type three. The response of the vast majority of these patients to the new drug was very striking, and in a few instances, phenomenal. Fourteen cases completely recovered within two weeks, and five cases, took three weeks for complete recovery. In this group there were three cases with enough evidence of mastoid involvement, which would have been advised to undergo surgery prior to the advent of sulfanilamide.

I now wish to add a group of twenty-two cases of acute otitis media treated with the aid of present day chemotherapy. In this group 19 were of the streptococcus hemolyticus variety. In three, a pneumococcus was the offending micro-organism. Eighteen of the streptococcic group responded immediately to both sulfanilamide and neoprontosil intramuscularly. However, the most dramatic response was of the three pneumococcic cases to sulfapyridine. Two were entirely well at the end of two and three days respectively, and one at the end of five days. The latter also suffered from a pansinusitis, was extremely toxic and had some signs of meningeal irritation. I wish to emphasize that in no one case

was chemotherapy the only means of treatment. It was an aid to the other routine care. Proper drainage in all these cases was established as soon as possible. The patients were also kept in bed and given general care. Thirteen cases in this entire group also suffered from sinusitis, or, more correctly, developed otitis media secondary to an underlying sinusitis. The sinuses in all these cases were taken care of as promptly as the middle ears proper, which in the final analysis, according to my observation, are nothing more than "paranasal sinuses", when considered from the point of view of infection.

CHEMOTHERAPY GIVEN CREDIT

Striking, indeed, is the fact that careful review of the medical literature from all over the world show records of only 76 recoveries from streptococcic meningitis in the 35 years previous to 1937. On the other hand, in the short period of sulfanilamide and allied compounds well over 200 such cases have been reported cured. Chemotherapy, then, must be given credit for this marked improvement in the mortality rate of a previously almost surely fatal condition.

Visualizing what has happened with the recent advent of chemotherapy, Galloway cites that in 1933 at the Evanston (Illinois) Hospital there were 37 cases of acute mastoiditis requiring surgical intervention, with five deaths. In 1938 there were only five such cases, with no deaths.

If meningitis, often of otitic origin, can be cured with chemotherapy, if the incidence of mastoiditis, practically always a complication of otitis media, can be so markedly reduced by means of chemotherapy, it is but natural that otologists everywhere should check up on this new form of therapy and take inventory of acute infections of the middle ear, the underlying trouble maker, infection from which source, directly or indirectly, so often spreads to its adjacent bony appendage, the mastoid, the lateral sinus, the labyrinth, the meninges, the brain! Can acute otitis media be cured or favorably influenced by means of chemotherapy? What about the safety of these new drugs?

With these objectives in mind, Houser sent out questionnaires to all members of the American Otological Society, to five additional otolaryngologists in each state in the Union, to 15 otologists in Canada and 150 outstanding members of the American Academy of Pediatrics. Of the 184 specialists who have submitted data, 89.6 per cent use sulfanilamide in the treatment of acute otitis media. Of these, 60 per cent are impressed with the fact that early use of the drug secures the best results. The number of acute otitis media cases treated by this group of physicians totals 9,667. The mortality rate for this large series was practically nil, one fatality for each 2,417 cases treated. It is the opinion of 76 per cent of this group of specialists that the incidence of mastoiditis is definitely reduced by means of chemotherapy. There is a growing belief that blood concentration estimations are not as important as was once supposed. There is, however, a unanimous agreement that blood counts should be made to detect changes of the white or red blood systems. In cases where a pneumococcus is either found or suspected, sulfapyridine is the drug of choice.

EFFICIENCY OF SULFANILAMIDE

According to Lockwood the efficiency of sulfanilamide depends upon the ability of the blood stream to distribute blood to the infected parts. When central necrosis exists, circulation fails and only the peripheral portion of the lesion is reached. He also points out that peptone and peptone-like bodies render the drug relatively ineffective and believes that the presence of these bodies in pus or tissue undergoing necrosis explains some failures. It is this fact which probably accounts for some of the atypical mastoid pictures otologists encounter now and then since sulfanilamide has been introduced. Some of these cases are apparently cured except for a persistent aural discharge. On the operating table, however, latent abscesses of considerable size are found. The fact must

be recognized that chemotherapy will not cure a mastoid that has undergone necrotic changes. Such conditions still demand surgery.

CONCLUSIONS

1. Present day chemotherapy when indicated and properly administered is a remarkable aid to other standard care, surgical or non-surgical, as the case may demand, but it is no more than an aid.

2. Whenever there is an empyema, tissue or bone necrosis, surgical drainage and removal of necrotic tissue is as much indicated today as it was prior to the advent of present day chemotherapy.

3. It would seem that we now have a most powerful weapon against trachoma, such as we never had before.

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THE FIRST YEAR OF THE WETZEL COUNTY NURSE DELIVERY SERVICE

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THE Division of Maternal and Child Hygiene of the West Virginia State Health Department has felt for some time that one of the principal gaps in the problem of maternal care has been the lack of provision for adequate nursing care during the delivery in the home. To demonstrate what could be done as a remedial measure, plans were made to establish a service in a rural area where public health nurses would be provided to assist the physicians at the time of their home deliveries.

A study was made by the State Health Department of various sections of the state with special consideration as to the need of such service with a view to selecting an area best suited for such a demonstration, due consideration being given to the limited funds available in the budget for this purpose. Wetzel county was selected because it represents a typical rural county where the vast majority of the deliveries are done in the home and because it had the second highest maternal mortality of any county in the state. For example, out of a total of 494 births reported in 1937, 455 or 92.1 per cent occurred in the homes.

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Wetzel county has a population of 22,234 spread over an area of 360 square miles. The land is rolling and hilly, being traversed by poor roads. The majority of the improved roads are gravel, but its western boundary is crossed by a modern concrete highway. There is a modern thirty-three bed, well equipped hospital in New Martinsville. The well established full-time county health service lent itself well for this endeavor.

The entire county was not considered for the demonstration because of the large territory to cover and the lack of personnel. An

area in the county extending from the western boundary at New Martinsville to a distance of fifteen miles was selected. In this area resides approximately one-half of the total population of the county. The area was divided between two nurses giving each approximately 5,500 people to serve.

The nurses are on call to assist physicians at the time of the delivery of their patients in the home and also carry on a generalized public health nursing program in the area assigned. The nurses serve alternate weeks on being on first call for delivery cases. These nurses are fully qualified and experienced public health nurses who have had four months special training in obstetrical nursing which included a home delivery service. The requirements for the nurse on such a program are more exacting than those set forth for the general public health nurse.

RULES AND REGULATIONS

Special rules and regulations were set up to govern this service which were submitted to and accepted by the Wetzel County Medical Society. A summary of the rules is as follows:

1. No charge is made for the service either to the patient or to the physician.
2. All patients are eligible for this service regardless of their economic status. The physician decides whether or not they are eligible for service.
3. Nurses on call are permitted to meet the physician at the home of the patient during the day. At night the physician is required to call for the nurse and to return her to her home when the case is completed.
4. No nurse is permitted to remain on a case unless the physician is also in attendance.
5. The nurse is not expected to assume any responsibility outside the province of nursing.
6. The nurse will do no prescribing, but merely carry out the physician's orders.

The nursing duties assigned to this service are:

1. Home visits to expectant mothers to advise them as to the preparation for the home delivery and advice as to prenatal care.
2. At the time of delivery, to prepare the patient for delivery.
3. Antepartum, intrapartum and postpartum nursing advice and care.
4. Nursing care of the infant.
5. Postpartum visits for further maternal and infant nursing care. Each nurse carries with her the following equipment to all deliveries:

1. Complete sterile obstetrical drape set, including sterile sponges and cotton.
2. Cord set.
3. Sterile rubber gloves for physician and nurse.
4. Enema outfit.
5. Catheterization outfit.
6. Hypodermic outfit.
7. Equipment and solutions for intravenous administrations.
8. Materials and equipment for the preparation of antiseptic solutions.

The nurse does not have any equipment such as drugs, anesthetics or instruments for delivery. These are carried by the physician using this service.

The service officially began on July 19, 1939, and the report of this activity up to July 19, 1940, is as follows:

Number of births occurring in designated area	240
Number of hospital deliveries	25
Number of deliveries by persons other than physicians	7
Number of deliveries by physicians not residing in the county seat	45
Number of deliveries by physicians residing in New Martinsville where the service is available	163
Number of deliveries attended by nursing service	123
Average number of hours spent by nurse on each delivery	3½
Number of prenatal cases admitted to nursing service in designated area	133
Number of nursing visits to cases admitted to the nursing service	303

Number of postpartum cases admitted to nursing service.....136
Number of postpartum nursing visits 526
Number of infants admitted to the nursing service.....190
Number of field nursing visits to infants admitted to service..... 904

This service has been very popular with both the physicians and the laity. For example, one physician has used this service fifty times out of fifty-two deliveries. Another physician feels that this service saved the life of one of his patients who had a rather severe postpartum hemorrhage and went into shock. The intravenous glucose solution was available and the assistance of the nurse proved invaluable in giving prompt treatment until the patient could be transported to the hospital.

The service has done much to improve relations between local physicians and the health department. Physicians are reporting their prenatal patients early to the health department so that these patients may receive valuable nursing advice before delivery. The physicians are having an opportunity of giving earlier and more continued prenatal care to their patients.

LOWER MATERNAL DEATH RATE

While this service has not been in operation long enough to appraise its effects thoroughly, it is already apparent that the maternal death rate is lower than it has been in previous years.

The local health department has been impressed with this service because it is a valuable contribution to educating a community as to the necessity for proper prenatal, natal and postpartum care. It is only through the fine cooperation of the local physicians that this has been possible. Where personnel is inadequate it is very difficult to correlate a delivery service with the generalized public health nursing service without allowing some phases of the service to be temporarily neglected.

The Wetzel County Health Department is indebted to Miss Elizabeth Funfrock and Miss Virtue Wriston, the nurses assigned to this service, for the fine cooperation and work they have done. It is also indebted to the Children's Bureau of the Federal Department of Labor and the Division of Maternal and Child Hygiene of the State Health Department which have cooperated in supplying funds and valuable advice for this service.

Sulfapyridine in Pneumonia

If the results obtained by Harry F. Dowling, M.D., Theodore J. Abernethy, M.D., and Clarence R. Hartman, M.D., Washington, D. C., in a study to determine the efficacy of combining sulfapyridine with serum for the treatment of pneumonia are confirmed by other similar studies, they would suggest that every patient over 40 years of age seen within the first four days of the disease receive serum in addition to sulfapyridine, the three men report in *The Journal of the American Medical Association* for December 21.

"After the fourth day of the disease," the three physicians say, "the value of serum as an adjunct is less. In order to give the patient the benefit of every possible aid, however, massive doses of serum might be given along with sulfapyridine to severely ill patients seen later in the disease."

They recommend that sputum be obtained from every patient before the administration of sulfapyridine is started so that serum may be given whenever it is indicated as soon as the type of pneumonia is determined. "This is necessary," they say, "in order that the utmost advantage may be taken of the superior results achieved by the earliest possible administration of serum."

Their study involved a series of cases of pneumonia caused by pneumococci type I through type VIII which were alternated for treatment with sulfapyridine alone and with sulfapyridine plus specific antipneumococcus serum.

"The mortality rate," the authors say, "was 12.5 per cent in the group receiving sulfapyridine alone and 9.8 per cent in the group receiving serum plus sulfapyridine."

They point out that if the type III cases are omitted (the outlook for this type of pneumonia being particularly poor) the corresponding figures are 9.2 and 4.5 per cent respectively.

PRIMARY MULTIPLE MICROCYSTIC LYMPHANGIOMA OF SPLEEN

(Case Report)

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THE rarity of primary splenic neoplasms as emphasized in a recent paper by Goldberg,[1] and his study of the prior reports, warrants the submission of an additional case of multiple microcystic lymphangioma of the spleen.

The patient, a negro male, age 55 years, was admitted to the hospital with an inoperable carcinoma of the pancreas, presenting widespread dissemination. The patient expired six days following admission and at autopsy the spleen weighed 125 grams and measured 10 x 5 x 4 cm. The capsule was faintly wrinkled, light grey. Along the anterior edge there were three small cystic nodules which were separate and discrete. The largest of these measured one cm. in diameter. (Fig. 1) On sectioning the spleen, no other tumor masses were found. The pulp was firm; the cysts contained a pale blue coagulated material. Microscopically the spleen showed changes compatible with chronic passive congestion with no areas of metastatic tumor discovered. Sections through the cysts described before revealed a wall composed of rather dense layers of fibrous tissue lined by large, pale, endothelial cells showing histologic budding to form small lymph vessels external to the larger cysts. (Fig. 2) The cyst contents were composed of a homogenous granular material containing erythrocytes and a few large mononuclear cells.

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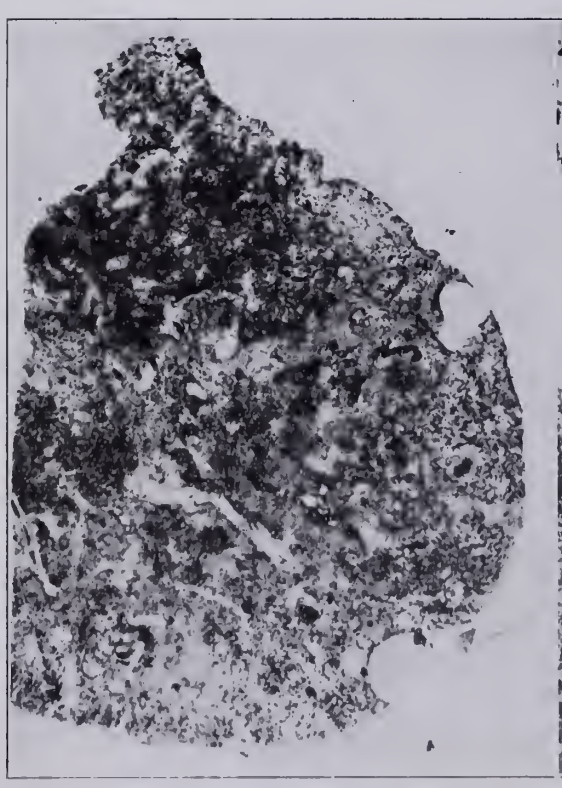

Figure 1—Low power view showing multiple microcystic lymphangioma of the spleen.

Figure 2—High power view showing cyst wall and proliferation of the endothelial cells.

Diagnosis: Chronic passive congestion; multiple microcystic lymphangioma of spleen.

DISCUSSION

This case histologically conforms with the requirements as outlined by Goldberg[1] and by Ewing.[2] The splenic tumor presented no recognizable symptoms during the short time the patient was hospitalized and it is indeed doubtful if there would have been any symptoms because of the relatively small size of the tumors. The finding of primary adenocarcinoma of the pancreas with widespread dissemination at necropsy would seem to indicate that we are dealing with an instance of two neoplasms occurring in the same patient. The second case reported by Goldberg likewise was in a woman expiring from generalized carcinomatosis, the primary lesion being in the breast.

SUMMARY

1. A case of multiple microcystic lymphangioma of the spleen is reported, occurring in a patient dying from generalized pancreatic carcinomatosis.

2. If Goldberg's interpretation of the neoplastic character of these cysts is correct, we are dealing with a double neoplasm in the same patient.

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CHEMOTHERAPY IN ACUTE BACILLARY DYSENTERY*

Part I—Clinical Types of Acute Bacillary Dysentery

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In evaluating any dietetic, biologic or chemical agent in the treatment of acute bacillary dysentery, it is essential that cases of similar characteristics be studied in order that just and informative comparisons may be had. As we see bacillary dysentery infections in the United States, the clinical picture varies from that of a mild innocent form which can not be distinguished from a mild food poisoning or from that accompanying a parenteral infection, to those of such a rapidly fulminating choleriform nature that one may suspect even the ingestion of some unknown poison or the existence of a true cholera.

Since a subsequent communication will deal with a study of a recently introduced chemotherapeutic agent, it is the object of this presentation to describe the outstanding clinical types of acute bacillary dysentery which have been with remarkable frequency observed in the southeastern states, including, of course, West Virginia, Virginia and Maryland.

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Reliable bacteriologic studies in these same areas indicate that fully 80 per cent of the cases of bloody diarrhea or "bloody flux" are due to the Flexner strain of dysentery bacillus. The Sonne type has been less frequently recognized, but there is reason to believe that in the 20 per cent from which the Flexner bacillus has not been recovered that a goodly proportion is due to the Sonne bacillus. The Shiga bacillus is rarely encountered here.

While it is academically important to relate the causative factor to the clinical picture of acute bacillary dysentery, any chemical agent which will, in the majority of instances, cure "bloody flux" as we know it, will be most welcome regardless of the nature of the etiologic factor.

In order that a more exact impression may be had by those who may review the results of the subsequent report, the various clinical pictures which may be produced by the dysentery bacillus will be described.

1. CONTACT CASE—INFECTION INAPPARENT

The patient was the mother of an infant having a very severe infection due to a Flexner bacillus of unusual toxicity. Identically the same organism was recovered from the mother as from the infant, although her only symptoms were three loose stools not containing blood or pus, passed during a period of 48 hours. Her infection would not have been detected had it not been that a study was being made of the stools of family contacts in an attempt to establish the frequency of concomitant infections within the homes of those patients having an active clinical infection.

2. MILD, BARELY RECOGNIZABLE FORM

The patient was an infant of 18 months who had blood, pus and mucus in his stools for a period of 48 hours only. He was never actually ill or indisposed at any time during the course of the infection. There were never more than four stools a day. It was never necessary to change the diet in the least. His stools were quite normal within 72 hours. The Flexner bacillus was cultured from the stools. Blackfan has reported the frequent isolation in his clinic of the Sonne bacillus from the stools of patients presenting a clinical picture of similar mildness and in which there may be pus, but no blood in the stools.

3. MILD CASE OF LOW GRADE FEBRILE REACTION

The patient was a little girl of 28 months, who without any vomiting or particular discomfort, suddenly began having frequent loose stools containing some streaks of bright red blood. Her temperature was then 101 degrees, at which level it remained for approximately 36 hours after which time it returned to normal. At no time was she uncomfortable or obviously ill. There was blood, pus and mucus in the stools for approximately four days. From these the Flexner bacillus was recovered. After this time, there was no more blood, and the stools were two to six a day, for approximately one week, generally containing some mucus. She was given cultured lactic acid milk and her total food intake was reduced for a few days. By the tenth day she was completely recovered and on her usual diet. She showed no effects of having had this brief illness. Characteristic agglutinins were demonstrable in her blood by the end of the second week.

4. CASE OF MODERATE SEVERITY

The patient was a male infant of 19 months who became suddenly ill with fever, loose blood-stained stools, and abdominal discomfort. He vomited once during the onset but not thereafter. The stools were 16 to 20 a day during the first week and the temperature ranged from 101.5 to 102.5 degrees, receding slowly until by the end of the first week, at which time it was regularly under 100 degrees. The stools in the beginning contained a considerable amount of blood, were quite fluid and contained little pus or mucus. By the middle of the first week there was a considerable decrease in the amount of blood. From this time, they were mostly pus and mucus and the Flexner bacillus was recovered repeatedly. There was a gradual abatement in the general intensity of the clinical findings after the first 48 hours. This continued throughout the first week. During the second week the only evidences of difficulty were those associated with the usual diminution in digestive ability which so characteristically accompanies or follows this malady. The diet was mainly protein in character, and continued to be somewhat restricted. There was at least one soft formed stool each day by the middle of the second week. By the end of the third week, the patient was taking a regular diet with some reduction of green vegetables, fruits and fats, and his strength was almost up to standard.

5. SEVERE FORM WITH RECOVERY IN A CHILD

The patient was a little girl of four and one-half years who became suddenly ill with a convulsion, fever and loose stools. She complained also of nausea and abdominal cramping. She vomited on her way to the hospital and was admitted with a temperature of 101.5 degrees. She did not present any severe prostration when first seen on the day of onset. From the appearance at this time it was not suspected that the patient might present such a severe clinical picture as subsequently developed. For a period of three weeks, her temperature ranged from 103 to 105 degrees and she was quite ill. During much of this time she had severe abdominal pains, prolapsus ani, 30 to 40 small stools of blood, pus and mucus. During the first four or five days the stools were larger in volume and contained relatively more blood than subsequently. The Flexner bacillus was cultured from even the earliest stools. Her fluid intake was always good and fluid imbalance never progressed to the point

that it complicated the clinical picture, which in many respects resembled that of typhoid fever. Vomiting occurred from time to time, yet with intelligent, cooperative parents and nurses, it was possible to keep up a good glucose intake as well as a good fluid intake. She was given whole cultured lactic acid milk and a protein type of diet. During the fourth week, her temperature ranged from 101 to 102 degrees at the beginning of the week to 100 to 101 degrees at the end of the week, and her clinical improvement paralleled the general temperature curve. The tendency to soft loose stools continued for some time beyond the fourth week. It was a good six weeks before she really was in control of her illness, and the convalescence thereafter required another six weeks before she was really back to where she had been at the beginning of her illness. All of this occurred in spite of the fact that there were no real complications.

This represents an important form of the disease in which with the proper administration of glucose and fluids, early and continuously, and with the proper medical management, it is generally possible to prevent the patient from going into fluid imbalance, or from developing an acidosis. After such severe protracted cases of bacillary dysentery, these patients almost invariably have a very prolonged period of indigestion, with difficulty tolerating rough or fatty foods, or even an excessive intake of foods otherwise reasonably well taken. Dietary indiscretion and parenteral infections tend to initiate diarrheas and indigestion which may, indeed, have all the seriousness of a true relapse.

6. SEVERE CLINICAL FORM WITH OBSCURE ONSET

The patient was a male, aged four years. He was a sturdy, well nourished lad who suddenly became ill with fever, vomiting, meningismus, severe prostration and who on admission and for 48 hours thereafter was comatose. He was admitted to the hospital a very few hours after his onset and at this time his temperature was 105 degrees and he had a leukocyte count of 24,000, with 75 per cent polymorphonuclear cells and 22 per cent lymphocytes. A remarkable feature of his clinical picture was that there were no loose stools until on the fourth day after admission to the hospital. The cerebrospinal fluid was normal and a röentgenogram of the chest was normal. Blood cultures were taken shortly after onset and at other times during the first 72 hours, but all remained negative. The fever during this time remained steadily elevated between 105 and 106 degrees. Fluids were administered and the urinary output maintained by means of intravenous glucose and water by mouth. Vomiting did not occur after the onset, and it was not difficult to keep the urinary output at a desired level. There was no distention or evidence of abdominal difficulty. The diagnostic efforts were directed mainly to the demonstration of a central nervous system infection, a blood stream infection or a beginning pneumonia. He did not have a bowel movement until on the fourth day. This was almost pure blood. Several such stools occurred throughout the day accompanied by severe tenesmus and there was a tendency to have a somewhat lower temperature. By this time, bacillary dysentery was suspected. The Flexner bacillus was recovered from the stools. The patient improved gradually from the fourth day on. Although his temperature remained elevated during the first week, thereafter it was under 100 degrees constantly, and while the stools containing blood, pus and mucus continued to be loose, but with decreasing frequency, they steadily improved in character through the remainder of the next ten days spent in the hospital. He was observed in the dispensary rather carefully for two months thereafter, and had a rather high degree of digestive difficulty which persisted for nearly two years thereafter.

7. SEVERE CHOLERIFORM IN AN ADULT

A man of 33 years of age brought his infant to the hospital suffering from a severe form of bacillary dysentery. The father himself at this time was suffering from "bloody flux" but said nothing about it to his wife or the medical attendants until after he was brought back to the hospital in a semicomatose state 48 hours after the admission of his infant. He had probably had fever at the time the baby was admitted, although he returned to his work the following morning, and although a hardy mountaineer, he fainted two or three times at work that day, vomited and had very frequent, bloody stools of large volume. The following day just before noon, he collapsed at his work and was brought to the hospital in an ambulance in a semicomatose state with a temperature of 106.5 degrees. He had a leukocyte count of 27,300, with 93 per cent polymorphonuclear cells, and seven per cent lymphocytes. He was extremely dehydrated and vomiting. He was given glucose intravenously fol-

lowed by 200 c.c. of normal human serum intravenously every 12 hours the first two days after admission. He responded very well to his early treatment and within the first 24 hours, his temperature had come down to between 102 and 103 degrees, and there was a marked amelioration of the clinical picture. However, he was having 30 to 40 stools a day. They were generally small, containing blood, pus and mucus with almost no fecal material. He had a severe prolapsus ani, and for a week presented the picture of a very ill person, in spite of the fact that his temperature was constantly seeking a lower level, his urinary output and fluid intake was good, and he was able to take and retain cultured buttermilk in considerable amounts. His stay in the hospital was three weeks. On discharge, he was in a relatively good condition except for a marked loss in weight and physical strength and an inability to take as yet a diet composed of other than buttermilk, cottage cheese, scraped beef and egg white. A further period of six weeks was required to regain his strength sufficiently to go back to work. The same organism which was recovered from his infant was recovered from his stools. It was a highly antigenic Flexner form, designated by the laboratory as a paradysentery Flexner type Y.

8. FATAL CASE DUE TO FLUID IMBALANCE AND ACIDOSIS

The patient was a little boy aged 17 months. There was a sudden onset with fever, vomiting and loose watery stools, containing blood, pus and mucus all within the 48 hour period preceding admission. During this time, he was seen by his local physician who gave him calomel and castor oil, toast and rice water. The patient's temperature remained in excess of 103 degrees from the time it was first examined by the physician until death. The physician brought the patient to the hospital on the third day of illness at which time he was moribund, markedly dehydrated and presented a typical picture of acidosis, a blood CO^2 combining power of 16, almost complete anuria and diarrhea with blood, and lesser amounts of pus and mucus of the most extreme frequency. In spite of heroic attempts to correct the fluid imbalance, the intoxication and the acidosis with such measures as intraperitoneal saline, glucose intravenously, soda intravenously, and two citrated whole blood transfusions, the efforts were unavailing and death occurred thirty hours after admission, due to the development of acidosis secondary to an infection due to the dysentery bacillus. The Flexner bacillus was obtained from the intestinal tract postmortem. Characteristic pathologic changes were found. In this instance death resulted primarily from an acidosis and not from a severe overwhelming toxemia such as will be described.

9. FATAL CASE FROM TOXEMIA

A little girl, aged three and one-half years was suddenly taken ill with vomiting, severe hemorrhagic diarrhea and coma. The temperature continued to rise. Vomiting, while present was not so severe. It was possible to maintain a reasonably good fluid intake and the urinary output appeared to be quite satisfactory. Blood CO^2 combining power was normal as late as one hour before death, which occurred at the end of 48 hours without the patient ever regaining consciousness. At autopsy the patient was not at all dehydrated. She was an extremely well nourished child to begin with and gave little evidence of loss of weight. At autopsy, a Flexner bacillus was recovered from the intestinal tract, and the early pathologic changes characteristic of a bacillary dysentery were present. There were extensive hemorrhagic changes within the tissues of the central nervous system, and some perivascular mononuclear infiltration. The patient, without fluid imbalance or acidosis intervening, died from a severe toxemia, the result of an overwhelming infection. While such deaths are quite frequent when the infection is caused by the Shiga strain, they may occur as in this case, due to the Flexner strain. Two other members of the same family were stricken during the same period of ten days. One died of a very virulent infection, but not so precipitate as this one. The other recovered after a long protracted illness. Because of the virulence of these infections, the bacilli recovered were subjected to intensive study. They were definitely Flexner and not Shiga in strain. It is likely that the Flexner strain at times does produce an important exotoxin just as the Shiga does. This is probably what happens in some instances similar to this one.

SUMMARY

The extremes of clinical pictures which may be encountered in those patients presenting dysentery bacilli in their stools are, as has been shown, widely divergent. When studying the effects of any therapeutic agent in acute bacillary dysentery, this fact must be appropriately taken into account in planning the investigation.

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

Sixteen and one-half million men have registered for military service. Almost one million of them have thus far been selected. According to news reports the men will be subjected to a hardening process to the point where they will be able to march 30 miles per day bearing full equipment. It is highly important that among them there shall be none who, because of a tuberculous focus, will crack under the strain. So that costly lessons, learned during the World War may not go unheeded, Spillman in an article in the *Journal of the American Medical Association* summarizes the methods employed to discover tuberculosis, calculates the enormous cost of service-acquired tuberculosis and discusses what should be done to safeguard the nation's manpower and financial resources against the enemy which bores from within.

Tuberculosis and Military Service

The World War is 22 years behind us, yet the federal government pays in compensation for tuberculosis that originated in service about $3,000,000 each month. Analysis of voluminous and complicated federal reports dealing with service-acquired tuberculosis yields the following approximate figures:

Cost of vocational training	$129,000,000
Insurance	130,000,000
Compensation	600,000,000
Hospital Care	100,000,000
	$959,000,000

The total number of men compensated for tuberculosis in 1922 (it is not feasible, from the annual reports, to run the figures back past 1922) was 36,600. In 1939, the total number was 55,634, including 1,947 deaths for that year.

The cost of taking a man who has tuberculosis into the service cannot be accurately calculated because of many factors that are still unknown and costs that are not apparent, but the author estimates that the figure would be somewhere around $10,000 per man to date, certainly not less than $7,500, to which should be added at least $50 a month for the rest of the man's life and compensation for his dependents after death.

Study of army procedure during the World War leads to the conclusion that the methods employed for the detection of tuberculosis were inadequate. This does not detract from the stature of that distinguished army surgeon, Colonel George E. Bushnell, the advisor to the Surgeon General on all matters pertaining to tuberculosis. It was the consensus of experts in 1917 that adult exogenous infection in childhood is well nigh universal and that every infection confers an immunity to anything short of massive doses of bacilli in later life. By the same token, adult tuberculosis was held to result from a reactivation of the antecedent infection. It was thought that for every soldier who had incurred tuberculosis as a result of military service, 10 others had brought the disease with them into the army. Present-day experience does not uphold this belief—to cite at random just one of numerous communications, Diehl and Myers prove the development of six cases of tuberculosis in one college fraternity a year after one of its members was found to have a positive sputum, and the development of tuberculosis in a girl several years after her sorority roommate was found to have tuberculosis.

The problem at hand is this: How can the recruit who already has active tuberculosis be recognized, that he may be rejected for the protection of himself and others? Colonel Bushnell trained a large number of highly competent diagnosticians, to whom he imparted the significance of the post-tussal moist râle and the technique of eliciting it. The patient is instructed to cough gently at the end of deep expiration. When he inhales after the cough the râle is heard. The presence of persistent moist râles was the criterion for determining the existence of tuberculosis. Several prominent physicians and radiologists tried to induce the Surgeon General to make the radiograph the decisive factor in the diagnosis of pulmonary tuberculosis. The practical difficulties in the way of the adoption of the radiograph were, however, insuperable, according to Colonel Bushnell, in which conviction he was supported by a special committee of the Council of National Defense which investigated the question. Among the difficulties were the enormous cost of photographing, the impossibility of obtaining a sufficient number of plates and the lack of trained radiologists.

Draft boards set up in every community added to the difficulty. These boards included local physicians who were supposed to reject draftees with disqualifying defects. While most draft boards functioned honestly and intelligently there is evidence in official publications that, far from weeding out the manifestly tuberculous, some boards actually

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President's Page

I start my term as president of the West Virginia State Medical Association with a full realization of the honor and the responsibility which you have given me. I am grateful for the honor and I accept the responsibility, believing that all of you will give me the guidance and the support so necessary to a successful administration.

We still have many unsolved problems. As the months go by, I will endeavor to discuss our most pressing needs openly and frankly in this President's Page. I believe that most of our problems can be solved through teamwork; without which we can accomplish nothing. We particularly will need teamwork during the coming session of the state legislature. We will endeavor to keep all of you informed on all legislative matters pertaining to the profession so that if and when you are asked to help, you can act quickly and intelligently.

In almost every session of the legislature during the past 15 years we have had at least one battle with the cultists. We will probably have one or more during the session of 1941. Our chief objective will be to preserve our own high standards of practice for the regular medical profession toward the end that the sick people of West Virginia may receive the best possible care at our hands. If we keep our own house in order, if we foster and encourage refresher courses and postgraduate work among our members, if we continue to raise the level of our own scientific attainment, we need have little fear of the cult problem. It will take care of itself.

In my humble judgment, the time is rapidly approaching when we must take some action on prepayment insurance for medical and surgical service. Commercial insurance companies are invading this field and establishing so-called "allowances" for surgical procedures. These allowances, which run from 50 to 60 per cent of regular surgical charges, may eventually become standardized fees if we fail to act. It is not so much a question of whether we like or dislike prepayment insurance. It is here, and, in my opinion, it is on the threshold of a vast expansion. In the next few years, perhaps during my own term as your president, we may see the West Virginia State Medical Association enter the insurance field or else endorse some standard form of commercial insurance that can be sold with our approval. In any event, we are not going to ignore the subject.

Please write in your suggestions, your criticism and your advice with reference to the problems of organized medicine. My only desire is to carry out your wishes and I hope you will make those wishes known.

May the New Year bring happiness to you all.

Robt. C. Bufford

President.

West Virginia Medical Journal

P. O. Box 787
Public Library Building
CHARLESTON, WEST VIRGINIA

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DR. LANGFITT - DR. BUFORD

With the dawn of the new year, we pause to pay tribute to our retiring president, Dr. Frank V. Langfitt of Clarksburg, and to extend a hearty welcome to his successor, Dr.

Robert King Buford, M. D., President-elect

Robert King Buford of Charleston. Dr. Langfitt's term closed on December 31; Dr. Buford's started on January first.

One of the outstanding events in the Association's history took place during Dr. Langfitt's term of office. We refer to the joint meeting last July with the Medical Society of Virginia when approximately 1,000 physicians from the Old and New Dominions gathered in the historic Greenbrier Hotel at White Sulphur Springs for a scientific program rarely equaled in this country.

Frank V. Langfitt, M. D., Retiring President

In the absence of a session of the state legislature, Dr. Langfitt's administration was one of retrenchment. Association membership was increased to its highest peak and Association finances were augmented to a marked degree. During Dr. Langfitt's term the license of Dr. S. M. E. Simon of Williamson was revoked by the Public Health Council and the revocation sustained by the circuit court of Mingo county. Medical preparedness became a paramount issue and more than 90 per cent of West Virginia doctors cooperated by sending in exhaustive questionnaires on their ability or inability to serve to the American Medical Association. In all of these matters and in all of his contacts with the profession and the public, Dr. Langfitt

displayed the qualities of intelligent leadership which made his administration such a success.

Dr. Buford takes over the reins with a comprehensive grasp of the Association's needs and problems. He has been a loyal servant of the Association for many years, as president of his local society, as chairman of the Association's Legislative Committee, its Committee on Scientific Work and as a member of the Council for the past four years. Few men have ever assumed the Association presidency with a better knowledge of medical conditions in West Virginia or with better training and experience to cope with those conditions.

We congratulate Dr. Langfitt upon his successful term and extend our best New Year's wishes to Dr. Buford for an interesting and successful administration.

NEW YEAR'S GREETINGS

We wish success, happiness and prosperity to all our readers in 1941.

The year 1940 has been a good one in many ways. Most of the election laryngitis has now healed, the Christmas turkey has been digested and the income tax man is still three months in the future. Life could be much worse, even without talking about the war.

West Virginia doctors must have had a good year. Out of more than 1,200 who are Association members, less than 10 were dropped for non-payment of dues. This is the smallest number on record, so times must be prosperous.

The West Virginia State Medical Association also prospered in 1940. This was due in part to the large membership and the small delinquent list. Another contributing factor was the joint meeting with Virginia at White Sulphur Springs. The convention costs were split fifty-fifty, and the convention income from commercial exhibits was trebled, so it was a good deal all the way around.

THE WEST VIRGINIA MEDICAL JOURNAL had its best year in history, topping 1929-1930 by a good margin. All the JOURNAL profit was made on advertising. The JOURNAL is in the black to the tune of about $12,000. Do not worry about all this money. It is covered by a sizeable bond.

We hope times will continue to prosper and that members will be as good about their dues in 1941 as in 1940. Dr. W. C. Camp of Spencer paid his 1941 dues last fall and received our No. 1 membership card, as he has these past 10 or 12 years. Modesty permitting, we wish continued success to our own JOURNAL.

Before signing off we want to mention our county societies with 100 per cent paid up dues. They are Barbour-Randolph-Tucker, Boone, Brooke, Cabell, Doddridge, Fayette, Lewis, Marion, Marshall, Mercer, Mingo, Ohio, Parkersburg Academy, Potomac Valley, Preston, Raleigh, Taylor and Wetzel. That is a sizeable list.

DOCTORS AND DEFENSE

Uppermost in the minds of most physicians is undoubtedly the question of national defense and the plans of the government to meet the immediate problem of furnishing an adequate medical service to the men of our unprecedented peacetime army and navy. Of equal importance is the problem of training the large number of medical department trainees who, at the expiration of their year of military service, will pass to the enlisted reserve corps. If this is our peacetime problem, what will happen in the event of a national emergency.

The Surgeon General of the Army has recently furnished an outline of the participation of the medical department in the 1940-1941 training program which should be of great interest to the entire medical profession. By next spring the total strength of the army will be 1,400,000 men. This will be represented by the regular army of 400,000,

the national guard numbering 200,000, and 800,000 citizens selected for military service.

The medical department will be charged with providing adequate medical service for the entire army. This will include the training of medical detachments and the medical department units of the regular army and the national guard. The initial requirement will be approximately 6.5 doctors for each 1,000 men in the military service. For an army of 1,400,000 men, 9,100 doctors will be required. There are now 1,200 physicians in the regular army and 1,100 in the national guard, leaving approximately 6,800 physicians to be supplied by the reserve corps. There are now 1,500 reserve physicians, leaving 5,300 to be procured during the next few months.

Under the present joint resolution passed by the seventy-sixth congress, the president is authorized to order into active military service for a period of 12 months, any and all members of any reserve component of the army with or without their consent. If a sufficient number of officers do not indicate their availability for this service, reserve officers must necessarily be ordered to duty without their consent. Additional appointments among physicians of draft age will increase the strength of the medical corps reserve.

Physicians as a group will not be exempt from conscription. Their deferment because of importance to civil communities is a function of the local draft boards. It is difficult to approximate the number which will be inducted into the army, but it is obvious that the training received by such draftees will be more appropriate and the service rendered the army of greater value if the physicians who are eligible and qualified for appointment in the medical corps reserve be commissioned in the officers' reserve corps for duty as medical officers, rather than continue their training as enlisted men.

Physically qualified graduates of approved schools of medicine who desire appointment in the medical corps reserve for immediate active duty should make application to the Commanding General of the Fifth Corps Area at Fort Hayes, Columbus, Ohio. Appointment in the medical corps will continue as at present through competitive examinations of reserve officers who have not passed the age of 32 years at the time of appointment.

Racial Background

There is as yet no known scientific test that will identify the racial background of a person whose blood contains so many and so dilute racial strains as to make his racial origins doubtful, *The Journal of the American Medical Association* for December 21 declares in a discussion of "Mongolian Spots and Negro Heredity."

"In a recent discussion of a case involving rape the question of Mongolian spots as an indication of Negro inheritance received special attention," *The Journal* says. "The so-called Mongolian spot is a curious manifestation of pigmentation which consists of one or more bluish dark spots that appear at birth in the sacral (lower end of the spinal column), lumbar (loin) and gluteal (buttock) regions. These spots resemble the black and blue marks on the skin after a contusion, and, according to Dr. Carelton Simon, consulting criminologist to the Association of Chiefs of Police of the State of New York, one of the consultants in the case in question, they are more distinct the first two weeks, becoming fainter and disappearing in from two months to two years. Ninety per cent of all Japanese infants have them, and they are common also among infants of the Javanese, Malays, Chinese, natives of Greenland and tribes of the American Indian.

"Parallel discussions of other features which have been considered as indicative of Negro blood, including physical characteristics such as increased pigment in the eyes and nails and blood tests, lead to the conclusion that there is as yet no known scientific test that will identify the racial background of a person whose blood contains so many and so dilute racial strains as to make his racial origins doubtful. Furthermore, the mathematical computation that in twenty generations every individual is the lineal descendant of more than a million forebears symbolizes the complicated nature of the subject."

General News

Called to Military Duty

The following West Virginia doctors have been called to active military duty at Fort Benning, Ga., effective as of December 15:

Capt. J. L. Waldock, Nellis; Lt. G. L. Armbrecht, Wheeling; Lt. D. L. Butterfield, Milburn; Lt. A. B. Kizinski, Logan; Lt. L. H. Layman, Holden; Lt. E. R. McNinch, Weirton; Lt. K. M. McPherson, Beckley; Lt. B. J. Moore, Chester; Lt. J. H. Thornbury, Logan; Lt. James O. Warren, Welch.

This office has been informed that Dr. W. W. Davis of Beckley and Dr. B. W. McNeer of Hinton have been ordered to the Army Field Medical School, Carlisle Barracks, Pennsylvania, for two months, from where they will be stationed at Camp Lee, Virginia.

It has been previously reported to us that the following West Virginia doctors are already in active military service:

Capt. H. A. Conrad, Ft. Benjamin Harrison, Ind.; Capt. Lloyd R. Ayers, Ft. Benjamin Harrison, Ind.; Lt. Jerome H. Toupkin, Ft. Benjamin Harrison, Ind.; Lt. Norman Friedman, Camp Shelby, Mississippi; Dr. A. T. Repass (U. S. Navy) Roanoke, Virginia; Major L. R. Lambert, Adjutant General's Staff, Charleston, W. Va.

New Medical College of Virginia Hospital

The new Medical College of Virginia Hospital, which was dedicated December 5, 1940, is built in the form of a Maltese cross, with various utility services in the centre, the wings being used for housing patients. This arrangement gives the wards and each private room an outside exposure and shortens corridors to reduce noise. The north wing ties into the clinic building up to and including the top floor of the building.

An attempt has been made to segregate teaching patients completely from private patients. With this in mind a separate lobby is included for these two types of patients. Private patients will be admitted directly through the private entrance, with the possible exception of stretcher cases; these may enter through the emergency service. The emergency room is well equipped, with adequate room for care of emergency cases, including several treatment rooms, a recovery room, and an operating room.

The new building is air-conditioned. At present only two floors will be air-cooled, the first and the eleventh (operating room floor). However, all basic equipment is installed so that any one floor may be air-cooled in the future without interference from any other floor. Several new features have been developed for this system—each room has its own thermostatic control; a system of

New Hospital of The Medical College of Virginia

dampers and louvres has been developed avoiding any possibility of drafts; no air is recirculated, thus overcoming the objection that recirculation of air might lead to the transmission of infectious diseases. In the operating rooms, delivery rooms and other places where anesthetic gases may be used, recording thermometers and humidistats have been installed, giving a constant record of conditions.

Acoustical treatment has been applied to all corridors, lobbies, utility rooms, diet kitchens, and other places where excessive noise might be a disturbing factor.

The teaching ampitheatre, seating 228, has been built between the west wings of the hospital and the clinic and laboratory building and into the hospital at the basement level, with the outside entrance directly from Twelfth Street through a lobby.

There are five elevators in the center of the building, two for ward patients, one for private patients, one for stretcher cases, and one for utility purposes. There are also four dumbwaiters for the use of the dietary department and the central supply room. Elevators are so arranged as to be operated either with, or without, operators.

Emergency lighting is provided by a generator located in the sub-basement. In cases of power failure this system will maintain the current at given places throughout the hospital, including the operating rooms.

The delivery rooms, together with those operating rooms to be used for clinics, have been so built that the observer is separated from the rooms by glass partitions. Microphones afford two-way communication.

Physiotherapy, now recognized as an important adjunct to health service, occupies a wing of the hospital with a gymnasium for exercises; a swimming pool with ample filtering and purifying system for hydrogymnastics; a battery of small rooms for continuous arm, leg, contrast and Sitz baths, and a fever room. There is also a similar battery of rooms for electrotherapy.

The ninth floor for pediatrics is a contagious unit so designed as to take care not only of infants but, if need be, adults with contagious diseases. This is a self-contained unit with its own laboratory, utility room, diet kitchen and major operating room, together with isolation cubicles and single rooms. The formula room for this floor is so arranged and so planned that supplies will be received from the utility elevator, passed through preparation stages, finally ending up in the sterilizing room from which will be served formulas for the entire institution.

The psychiatry floor has 38 beds for both private and ward patients, with space for disturbed cases. The usual precautions have been taken to protect both the hospital and the mentally ill patients. The window screens are made of stainless steel which does not differ from the ordinary screen in looks but which has strength comparable to iron bars; gives protection without the feeling of restraint. A complete signal system is installed whereby any attendant needing aid can signal key positions.

The present tube system serving the clinic has been enlarged to include each floor of the hospital. This system can be used for carrying messages, small articles, records, etc. It is contemplated that any article desired can reach its destination in less than sixty seconds.

The entire building is wired for radio reception with a four-channel outlet to each part of the building. In the wards speakers are attached to the ceiling, one speaker for each eight beds; private rooms have individual speakers.

The service entrance is on the east side of the building between the hospital and the clinic building. Here all supplies will be received by one person, routed to the kitchen, the storeroom, the pharmacy, or elsewhere.

For signaling nurses, private patients will use an ordinary telephone, the line of which terminates in a small key cabinet in the nurses' station. If the patient can talk, the message will go direct to the nurse; if not, an attachment operates the telephone in such a way that a light shows at the nurses' station until the call is answered.

A typical ward floor shows many interesting features. Each wing has a sixteen-bed ward divided into four-bed units, each individual bed having an overhead track for curtain separation. Four sick rooms and one examining room are provided on each ward floor, making a potential capacity of sixty-nine ward beds. The two utility rooms are arranged to serve the wings without any traffic into the central lobby. Four nursing stations, bathing and toilet facilities, a large enclosed porch, a room for staff members, a commodious room for teaching, and simple laboratory facilities are provided on each floor. Two bed pan sterilizers in each ward make it unnecessary for these utensils to be carried into the corridors, lobbies, or utility rooms. A bedside nurses' call system is provided for each patient's bed. Lighting for the wards was carefully studied and a louvre light placed in the middle of each four-bed ward in such a position that the light hits two feet from the foot of each bed and cannot shine into the face of the patient. Overbed lights are designed conversely so that the light shines toward the foot of the bed.

Mechanical features include a large ice plant manufacturing sixteen tons of ice per day; a central vacuum station for cleaning dust mops; baby baths constructed with thermostatic controls and recording thermometers; similar units installed in the central supply rooms for the control of hot water used in hot water bottles.

The ultimate bed capacity of the hospital, including bassinets for babies, is about six hundred. These will replace those of the present Memorial Hospital, including a considerable number for the future growth of the institution.

Britain to License U. S. Doctors

Canadian and U. S. physicians are being licensed by Great Britain for the duration of the war.

Military Memberships

Free Association memberships will be carried for all Association members who are called to active military service during the present emergency. This action was taken by the Council on November 7 and a brief announcement to this affect was made in the December JOURNAL. Some 25 members have already been called to active duty with the army and navy and others are expected to follow.

A number of the component county medical societies have concurred in the action of the Council so that members in military service will not have to worry about either county or state dues during their absence. Complimentary membership cards for 1941 have been sent out.

Conference of Secretaries

The annual conference of County Medical Society Secretaries and Presidents will be held at the Daniel Boone Hotel in Charleston on Saturday, January 18, 1941. The conference will convene at 10:30 o'clock in the morning and will wind up that evening when the visiting doctors are guests at the annual dinner dance of the Kanawha Medical Society.

Although the complete conference program had not been completed at press time, the subjects to be covered included industrial medicine, prepayment insurance, indigent medical care, medical preparedness and public affairs. Dr. C. M. Peterson of Chicago, secretary of the Council on Industrial Health of the American Medical Association, is expected to be the speaker on industrial medicine.

The secretaries and presidents will be guests of the Association at lunch between the morning and afternoon sessions and will be joint guests of the Association and the Kanawha Medical Society at the evening dinner dance. More than 50 county presidents, secretaries and their wives are expected.

Our "Doctor" Strauss

Interesting reports continue to come in on "Doctor" S. S. Strauss, who is now in jail at Kingwood, West Virginia, charged with evading the draft. He is a federal prisoner and is awaiting action of the federal grand jury in Wheeling in March. It is our understanding that Strauss has a penitentiary record behind him and it is hoped to have a complete report on his activities soon.

Strauss worked southern Pennsylvania and West Virginia for several months as a "relief" doctor before he finally became enmeshed with the law. He posed as a graduate of the Long Island College of Medicine and glibly announced that he was licensed to practice in West Virginia. He is not licensed and the Long Island College of Medicine never heard of him. It is understood that Strauss did have a year or two of premedical work, but even that is doubtful.

The Strauss method of getting attention, work and ready cash was unique. It was tried in Montgomery, Beckley, Logan, Welch and many other places. We quote from a letter received from an interested party in Connellsville, Pennsylvania:

"The other day a doctor fainted in front of Dr. Kerr's office. Dr. Kerr examined the man and reported starvation, took him to the Wonder Bar and gave him a feed, and contacted Jerry Davidson, local merchant. Davidson took him to the Synagogue and fixed him up to the tune of $19. Davidson also paid for his hotel room and got him a job with the doctor friend in Pittsburgh. The next morning when Davidson went to the hotel, the doctor had checked out quite early and was not to be found. Davidson is on the warpath."

Strauss pulled essentially the same performance in Montgomery, Beckley and other places in West Virginia. "Starvation" was the usual diagnosis, and funds and employment generally resulted. Strauss is now out of circulation and will probably be fed at government expense for some little time.

War Medicine

Beginning in January, the American Medical Association will publish a new periodical, "War Medicine", as a part of its contribution to the preparedness program. The editorial board of the publication will be the Committee on Information of the Division of Medical Sciences of the National Research Council. This includes Dr. Morris Fishbein as chairman.

The Division of Medical Sciences of the National Research Council has developed a number of scientific committees which are actively at work preparing reports of various phases of medical service under military conditions. These official documents will be available to the new periodical for prompt publication. Already reports on chemotherapy, the standardization of the treatment of pneumonia, numerous problems concerned with medicine in aviation, peripheral nerve injuries, wound treatment, gas gangrene and similar subjects are being made available.

Congress on Industrial Health

The third annual congress on Industrial Health, sponsored by the Council on Industrial Health of the American Medical Association, will be held at the Palmer House, Chicago, on January 13 and 14, 1940. Speakers include Dr. Irvin Abell, Louisville; Dr. Sumner L. Koch, Chicago; Dr. Henry H. Kessler, Newark, and many others.

American College of Surgeons

The sectional meeting of the American College of Surgeons embracing West Virginia will be held at the William Penn Hotel, Pittsburgh, on March 17-19, 1941. Hospital conferences will be held in connection with the meeting. Fellows of the College and interested members of the profession are invited to attend. A public meeting on health conservation is scheduled for the last evening. States to be represented at the Pittsburgh meeting are Pennsylvania, Ohio, Virginia, West Virginia, Delaware, Maryland, New Jersey, New York and District of Columbia.

Annual Forum on Allergy

The third annual Forum on Allergy will be held at the Claypool Hotel in Indianapolis on January 11 and 12, 1941. The registration fee is five dollars and all physicians in good standing in their local medical societies may attend. There will be 36 outstanding authorities on the week-end program and a wide variety of instruction methods will be used. Doctors interested in attending the Forum should communicate with Dr. Tell Nelson, 636 Church Street, Evanston, Illinois.

Social Hygiene Day

National Social Hygiene Day will be observed for the fifth time on February 5, 1941, Dr. Walter Clarke, executive director, the American Social Hygiene Association, announced recently.

Fifth Social Hygiene Day will be the spearhead of a concerted drive to safeguard men in military and naval training camps and in essential industries from the ravages of venereal disease. The effort this year is aimed at reducing commercialized prostitution to a minimum and keeping syphilis and gonorrhea infection rates as low as possible in army, navy and defense industrial personnel.

Plans for the annual event include 5,000 community meetings and four regional conferences in Philadelphia, Saint Louis, New Orleans and Los Angeles.

County Society News

Cabell County

The regular monthly meeting of the Cabell County Medical Society was held at the Hotel Pritchard, Huntington, on the evening of December 12, 1940. The guest speaker was Dr. Edward Goldcamp of Youngstown, Ohio, who gave an interesting paper on "Postoperative Pulmonary Complications."

The annual dinner dance of the society was held on the evening of December 14.

JAY L. HUTCHINSON, *Secretary*.

Eastern Panhandle

Dr. P. C. Chenoweth of Elkins was the guest speaker at the December 12 meeting of the Eastern Panhandle Medical Society. His subject was "Spinal Anesthesia", followed by a film demonstrating the procedure in color.

Following the program, the election was held and Dr. G. O. Martin of Martinsburg was elected president for the coming year. Dr. W. L. Haltom and Dr. A. B. Eagle were elected vice presidents, Dr. Max Oates was elected secretary-treasurer and Dr. T. K. Oates was elected to the board of censors for three years.

A committee was appointed to study the prepayment plan of medical care for the tenant farmers who are under supervision of the federal government.

M. H. PORTERFIELD, *Secretary*.

Fayette County

The Fayette County Medical Society held its regular monthly meeting at the Woman's Club in Montgomery on the evening of December 17, 1940, with an excellent attendance of members and guests. The speaker was Dr. Russell L. Haden of Cleveland, who gave a highly interesting and practical paper on arthritis.

New officers were elected as follows:

Dr. M. A. Moore, Longacre, president; Dr. C. H. Engelfried, Montgomery, vice president; Dr. W. B. Davis, Elkridge, vice president; Dr. Gilbert A. Daniel, Alloy, secretary-treasurer; delegates, Dr. W. P. Bittinger, Summerlee, and Dr. R. H. Jones, Montgomery; alternates, Dr. M. A. Moore and Dr. G. C. Hedrick, Glen Ferris; censors, Dr.

A. E. Bays, Montgomery; Dr. W. P. Bittinger and Dr. W. R. Laird, Montgomery.

Dr. John L. Feldman, Longacre, was admitted to membership.

Dr. William K. Keller, assistant professor of psychiatry, University of Louisville School of Medicine, was the guest speaker at the November 26 meeting of the society which was held at the courthouse at Fayetteville. His subject was "The Menopause; Diagnosis and Treatment."

Dr. James B. Thompson of Scarbro was admitted to membership in the society at this meeting. Following the program, the Ladies' Auxiliary of the Presbyterian church served refreshments.

G. A. DANIEL, *Secretary*.

Kanawha County

The annual election of officers of the Kanawha Medical Society was held at the Daniel Boone Hotel, Charleston, on the evening of December 10, 1940. Dr. P. A. Tuckwiller was elected president; Dr. Owen McMillan, vice president, and Dr. Vernon Peterson, board of censors. Dr. W. A. Thornhill, Jr., was continued as secretary-treasurer.

The guest speaker of the evening was Dr. William H. Craddock, Cincinnati, who gave a highly practical paper on "Nasal Allergy."

New members voted in at the December 10 meeting were Dr. James E. Grace, Cabin Creek; Dr. J. C. Laslie, Charleston, and Dr. L. N. Strickland, Widen. Members accepted by transfer were Dr. Robert D. Ketchum, Dr. Verne L. Lance, and Dr. Charles W. Powell of Charleston, and Dr. Joseph T. Peters and Dr. S. W. Jabaut of South Charleston.

The next meeting of the society will be held on January 18, 1941. This will be the annual banquet and dance, and the installation of officers. Other county medical society presidents and secretaries, in attendance at their annual conference in Charleston on the same date, will be guests of the society on this occasion.

W. A. THORNHILL, JR., *Secretary*.

Logan County

The Logan County Medical Society held its annual banquet and election of officers on the evening of December 11 at the home of Dr. and Mrs. W. T. McClellan. The hosts entertained with a turkey dinner, which was enjoyed by all.

New officers elected were Dr. C. A. Davis, Logan, president; Dr. J. W. Carney, Logan, vice president; Dr. W. P. Hamilton, Logan, secretary-treasurer and Dr. W. S. Gilmer, Henlawson, censor. Dr. Carney was elected delegate to the state meeting at Charleston, with Dr. E. H. Starcher, Earling, and Dr. F. E. Brammer, Dehue, as alternates.

J. W. CARNEY, *Secretary*.

Monongalia County

At the regular meeting of the Monongalia County Medical Society on December 2, the following officers were elected for the coming year:

President, Dr. William B. Scherr; vice president, Dr. Carl E. Johnson; secretary, Dr. C. T. Thompson; treasurer, Dr. T. Jud McBee; delegates, Dr. Brinley John and Dr. F. T. Scanlon; alternates, Dr. G. R. Maxwell and Dr. R. R. Summers; board of censors, Dr. C. B. Pride and Dr. C. C. Romine.

Dr. L. W. Cobun, who has served the society as treasurer for many years, was elected to honorary membership.

CARL E. JOHNSON, *Secretary*.

Potomac Valley

The Potomac Valley Medical Society met at Romney, West Virginia, celebrating the fiftieth anniversary of our president, Doctor Martin Frank Wright of Burlington. Dr. Thomas Bess introduced the toastmaster, Doctor Hawkins of Cumberland, Maryland, who gave a wonderful talk, followed by remarks from Doctor W. J. Woelz, D. D. S., Keyser, W. Va.; Doctor W. A. Gracie of Cumberland, Maryland, and Dr. R. W. Love of Moorefield, W. Va. There were forty-six members and guests present at this turkey dinner.

This being the last meeting of 1940, the election of officers for the new year was held.

President, Dr. J. A. Newcome, Keyser; vice president, Dr. J. B. Groves, Petersburg; vice president, Dr. R. W. Dailey, Romney; vice president, Dr. O. V. Brooks, Moorefield; vice president, Dr. O. F. Mitchell, Franklin; vice president, Dr. J. H. Wolverton, Jr., Piedmont; secretary, Dr. E. A. Courrier, Keyser.

E. A. COURRIER, *Secretary*.

BOOK REVIEWS

Principles of Surgical Care

"Principles of Surgical Care, Shock and Other Problems," by Alfred Blalock, M. D., C. V. Mosby Company, Saint Louis, 1940.

The monograph is an extension and amplification of the Beaumont Lectures given before the Wayne County Medical Society. It contains the essence of Blalock's well known work on shock.

As the author states in the preface, "shock cannot be considered adequately without including a discussion of many abnormalities which may contribute to the development of the condition. These abnormalities, such as dehydration, hypoproteinemia, acid-base disturbances, etc., are frequently encountered factors in the genesis of, and the prevention and treatment of shock, but their clinical improvement extends far beyond these limits. Hence, it was decided that they should be dealt with as entities, and not simply as contributing factors in the causation of peripheral circulatory failure (shock)."

The book emphasizes throughout the value of preoperative and postoperative care, and gives pro and con discussion of all recommended measures. It should be in the library of every surgeon whose technique aims beyond cutting, tying and keeping clean.

Modern Dermatology

"Modern Dermatology and Syphilology," by S. William Becker, M. D., and Maximillian E. Obermayer, M. D. Price $12.00. Pp. 847, with 461 illustrations in text and 32 color plates. Philadelphia, J. B. Lippincott Company, 1940.

This is an excellent text for students, and a very desirable hand book for general practitioners, as well as for dermatologists who want to keep abreast of the up-to-date and practical trends in the subject.

The mechanics of presentation warrant approval: the clear type and two columns to the page are easy on the eyes; the simple and dignified diction which approaches the classic, is much to be desired in professional and scientific treatises. At the beginning of each chapter there is a brief introduction to the subject matter. This is of great assistance to the student, general practitioner, and casual dermatologist. The author's term "orientation" is self-explanatory. The pictures are remarkably clear, well chosen, and illustrate quite exactly what they are intended to show.

The authors display considerable originality in their concept of the subject, and enforce their views with cases, logic, and courage. Emphasis is placed on the skin being an organ of the body—and related in its reactions to the other body functions.

An early chapter is devoted to the general principles of therapy. This is covered in a practical and realistic way. One may marvel at the number of proprietary preparations (with the names of their manufacturers) mentioned by the authors, and wonder what has become of the U. S. P. However, insofar as the reviewer is familiar with the products mentioned they are therapeutically and aesthetically superior to their U. S. P. equivalents. This is logical in a fast-moving age.

Space and attention are given to the various dermatoses in proportion to their frequency and importance in the United States. Rare and foreign skin diseases are lightly discussed or left unmentioned.

The eczema-asthma complex, the chronic urticarias, and the neurodermatitides—rapidly increasing dermatoses in our present civilization—are masterfully discussed as types (some of them) of "nervous exhaustion." The therapy here, as always where possible, is directed toward the specific cause. Allergy and its relations to the diseases of the skin are discussed in a refreshingly clear manner. Likewise drug eruptions and occupational dermatoses are as thoroughly reviewed as is possible in a general treatise.

The bibliography at the end of each chapter is sufficiently complete and adequate in respect to recent literature on specific subjects. This is a splendidly written book which should be in every medical library. —M. L. B.

The molars which are acquired at the age of six, sometimes believed to be "baby" teeth, are actually the most important teeth of the lifetime set and should be carefully preservd, Constance J. Foster, Great Neck, N. Y., states in *Hygeia, The Health Magazine.*

These teeth provide the largest grinding surfaces and serve as corner posts for the mouth. If lost, the other teeth fall out of line and the facial contours may become disfigured. It has been discovered that the loss of one permanent molar reduces the chewing efficiency of the mouth by about one-third.

TWENTY-FIVE YEARS AGO

January, 1916 Issue of the W. Va. Medical Journal

Frontispiece: "Thank God every morning when you get up that you have something to do that day which must be done whether you like it or not. Being forced to work and forced to do your best will breed in you a hundred virtues which the idle never know."—Kingsley.

Original articles were by: Dr. Chas. T. St. Clair, Dr. J. C. Irons, Dr. Irvin Hardy, Dr. E. S. DuPuy, Dr. O. O. Cooper, Dr. G. C. Merriam.

It was with this issue of the JOURNAL that Dr. James R. Bloss become editor. His predecessor, Dr. S. L. Jepson had edited the JOURNAL "through nine volumes."

"* * * The editor wishes to very emphatically call the attention of those members of the State Association who may have communications which they desire published, to the fact that it is particularly desirable for them to be typewritten. The editor may be able to read them, but it is asking quite a great deal of the printer, who is not familiar with medical terminology to produce correct copy from some of the papers which have been submitted."

State News

Dr. M. T. Morrison has been appointed postmaster at Sutton.

* * * *

Dr. Ray M. Bobbitt, for some time second assistant to Dr. L. V. Guthrie, superintendent at the Huntington State Hospital, has resigned in order that he might take a special course in genitourinary diseases and diseases of the skin, in Baltimore. It is expected that later he will return to Huntington for the practice of his specialty.

* * * *

Dr. Roy B. Miller, recently of Hinton, has located in Parkersburg, and is limiting his practice to surgery.

* * * *

The Eastern Panhandle Medical Association, which held its meeting at the Hill Top House, Charles Town, recently, elected the following officers for the coming year: President, Dr. J. M. Miller, Charles Town; secretary and treasurer, Dr. A. B. Eagle, Martinsburg. The meeting was presided over by the late president, Dr. A. L. Grubb, of Berkeley Springs.

* * * *

A meeting of the Braxton County Society was called for the 21st of December at Burnsville. As yet we have not secured a report of this meeting. As Dr. J. W. Kidd, secretary, puts it, "This county is one of magnificent distances, and the physicians are far apart. As a consequence, at some seasons of the year, at least, it is very hard to get a quorum."

* * * *

Dr. R. J. Wilkinson of Richmond, Va., has been appointed surgeon in charge of the C. & O. Hospital at Huntington.

* * * *

By reason of a change in the paper used for the JOURNAL, the advertising cuts that were used in previous issues were found to be entirely unsuitable. Therefore, this first issue of 1916 had to leave out the advertisements of several customers.

Research Council Division

"In order to meet new and expanding requirements in the field of medical preparedness," *The Journal of the American Medical Association* for December 21 reports, "the following changes in the chairmanships and organization of committees in the Division of Medical Sciences of the National Research Council have been announced by Dr. Lewis H. Weed, chairman of the Division of Medical Sciences:

"Russell M. Wilder, M.D., Rochester, Minn., resigns as chairman of the Committee on Medicine (remains member of committee) to become chairman of the Committee on Food and Nutrition of the Division of Biology and Agriculture and of the Division of Medical Sciences.

"O. H. Perry Pepper, M.D., Philadelphia, becomes chairman of the Committee on Medicine, resigned as chairman of the Subcommittee on Diagnosis and Therapeutics.

"Hugh Morgan, M.D., Nashville, Tenn., becomes vice chairman of the Committee on Medicine.

"James McLester, M. D., Birmingham, Ala., becomes chairman of the Subcommittee on Medical Nutrition.

"Warfield T. Longcope, M.D., Baltimore, becomes chairman of the Subcommittee on Diagnosis and Therapeutics.

"Henry Meleney, M.D., Nashville, Tenn., becomes chairman of the Subcommittee on Tropical Diseases vice Wilbur A. Sawyer, M.D., (resigning because of duties abroad)."

Woman's Auxiliary

The Auxiliary Bulletin*

The nineteenth year of the National Auxiliary is well under way. Ere this, I am sure you have realized that our project for the year 1940-1941 is to increase the circulation of the *Bulletin*, our official organ. In selecting this project for the year, we have done so with the full realization that we have selected a hard one.

Do you want to know what the auxiliary stands for? Do you want to know more about the program of the auxiliary and the working of each of the several committees, exhibits, *Hygeia*, legislation, organization, press and publicity, health education and public relations? Why are so many fine intelligent women giving much of their valuable time to this organization? Why do the doctors themselves encourage the growth and expansion of our activities as an organization? Read the *Bulletin*, the auxiliary digest. Become informed on the whole program of the Woman's Auxiliary to the American Medical Association and its component auxiliaries.

Little did I realize when I became president of the auxiliary that I should soon be forced to become a "sales agent" for our periodical. Yet here I stand before you, ready to present my sales talk regarding the publication of the Woman's Auxiliary to the A. M. A. And, in passing, I would have you realize that I am not working my way through college, finishing school or an N. E. A. correspondence course by stimulating such a circulation. I am working solely and simply in behalf of the Woman's Auxiliary in its efforts to make our organization a constructive force in furthering the program and ideals of the A. M. A.

There are two questions which I have often been asked in this connection. First, "Why do you place so much stress upon the importance of the *Bulletin?*" Second, "Is it really so all-important that the *Bulletin* have a large circulation?" With your kind indulgence, I shall for the next few minutes attempt to point out the purposes behind this drive for a more extensive circulation of the *Bulletin*.

Many of these purposes are quite obvious and self-evident. For instance, it is probably unnecessary for me to go into the virtues of the *Bulletin* as a medium for the spreading of information regarding the work of the auxiliary. Neither would it be required of me to describe in meticulous detail the value of the *Bulletin* in fostering intelligent interpretations of the plans of our various county and state organizations, and as a stimulator of interest in our individual and collective activities. Nevertheless, it is these and other factors which I feel must be emphasized, and it is only by constant, almost monotonous, emphasis that we can hope to lift the *Bulletin* from the depths of neglect into which it has fallen.

For those of you who possibly may not be entirely up-to-date in this respect, I might just mention that the *Bulletin* is merely the new name which has been given to the publication that was formerly called the *News Letter*. In the light of the fact that the *Bulletin* should hold such a high place in our organization, one is appalled at the great gap between conditions as they are and as they should be. A very small percentage of our membership make the *Bulletin* a vital factor in their thinking and working. There is need of repeated emphasis to induce more of us to give serious attention to this vital publication.

The *Bulletin* is published for the express purpose of furthering our fellowship and propagating the principles and ideals of our organization. A competent editorial leadership directs and guides the policy of the *Bulletin*. Authoritative writers and otherwise discerning observers present, from time to time, a sweeping panorama of events of interest and importance.

Our members should read this periodical, because it conveys to them information of what other members are doing. They may feel that they have problems and hardships such as none others ever have. They may read that there are others who have faced even more difficult situations and have found a way to solve them. A tie of interest and understanding is formed through the channels of information about each other.

If we want to meet the goals set before us, our members need to be brought in touch with them through mutual information. The *Bulletin* is our best medium of information. It gives our members the main facts about activities and about the things in which our organization is engaged. We are

*Given before the Woman's Auxiliary to the Southern Medical Association at Louisville on November 13, 1940, by Mrs. V. E. Holcombe of Charleston, W. Va., president of the Woman's Auxiliary to the American Medical Association.

brought into contact and mutual relation. The *Bulletin* presents the essential features of what is transpiring in our organization.

An organization without an appropriate and special literature is like a garden without plants. The possibilities for growth are there, but there can be no good fruitage without the planting of seeds and the cultivation of the plants.

The power of the *Bulletin* in your organization is dependent upon whether it is given a place there or not. No instrument of righteousness, however excellent, can effect for good those whom it has no opportunity to touch. There is no magic power in food to nourish those who fail to partake of it. There is no efficacy in a *Bulletin* that is never read.

If we can but persuade our membership to give more consideration to the *Bulletin* we will make a sound investment, certain to be productive of future gains. Each member of our Auxiliary should realize her responsibility to our publication. Why? First, because it has an educational force, which is of particular value to each member.

Everyone recognizes this truth—that progress in any profession has been dependent on facts, observations and conclusions communicated by one individual to another, and recorded for future generations, each generation building on the foundation work of former generations. Advancement in any organization is in direct relationship to the improvement of facilities for the exchange and interchange of facts, information, knowledge and truth, and the proper use of those facilities.

It is with this truth in mind that our *Bulletin* is published. Through it new ideas and new knowledge are transmitted to the various members of our auxiliary. Many valuable ideas would die with the originator were it not for the aid given by the *Bulletin* in providing them with an audience.

With your help our *Bulletin* can be made one of the most important reservoirs of thought. With these ideals in mind I ask each member of the auxiliary to take a renewed interest in the *Bulletin*.

In this connection, I might add that the A. M. A. not only publishes its journal, but the health magazine *Hygeia*, in order to keep its members and the public in general informed regarding the various developments of medicine. The state societies also have their own local journals, all of which are of the utmost importance to the medical profession. Our *Bulletin* could be equally important, but it can be of no value unless it is well subscribed to and supported.

The immediate goal of our auxiliary is to increase the circulation of the *Bulletin* to include at least one-fourth of our Auxiliary membership. I feel confident that the members of the Auxiliary will lend their support to the end that this goal may be reached.

Fayette County

The Woman's Auxiliary to the Fayette County Medical Society met at the home of Mrs. H. F. Troutman of Page, on November 19, 1940. Mrs. Ralph Hogshead, acted as president, in the absence of Mrs. George Fordham, who was ill.

Mrs. H. V. Thomas of Clarksburg, state auxiliary president, spoke on "Aims of the Auxiliary." Mrs. S. S. Hall of Clarksburg, accompanied Mrs. Thomas. There were ten members present.

MRS. R. A. UPDIKE, *Secretary*.

Harrison County

The Woman's Auxiliary to the Harrison County Medical Society met on November 7, 1940, at the Gore Hotel, Clarksburg, with 20 members present. Mrs. James G. Ralston presided over the meeting.

Mrs. Carl Chandler, chairman of the *Hygeia* committee, spoke on "*Hygeia*, The Health Magazine." Mrs. Lawrence H. Mills gave a review of an article from *Hygeia*. A report on the *National Bulletin* was given by Mrs. John F. McCuskey. West Virginia leads in paid subscriptions with 1,100 subscribers. It was decided that the auxiliary would work with the local Red Cross in sewing and making sweaters. Mrs. C. O. Post was named intercounty representative to work with the state chairman for the convention in Charleston in May.

The next meeting will be held on December 5 at the Gore Hotel, Clarksburg.

MRS. J. F. WILLIAMS, JR., *Secretary*.

Lewis County

The Woman's Auxiliary to the Lewis County Medical Society met on November 27 at the Louis Bennett Memorial Clubroom, Weston. Mrs. C. R. Davisson presided and six members were present. Mrs. A. F. Lawson, public relations chairman, spoke on "How We Can be an Aid to the Community." Open discussion followed and after ad-

(Continued on page xix)

ACTIVE AND HONORARY MEMBERSHIP

WEST VIRGINIA STATE MEDICAL ASSOCIATION

(Editor's Note—Below will be found the names of all active and honorary members in good standing in their respective county societies. The asterisk (*) appearing before a name indicates honorary membership. The (†) indicates that the wives of these doctors are members of the Woman's Auxiliary. From this type will be published the annual Association directory of members. Will each member please check his own name and address and notify the Journal at once if any error is made.

BARBOUR-RANDOLPH-TUCKER

H. H. Bolton ..... Pierce
J. M. Brand ..... Coketon
A. P. Butt ..... Elkins
P. C. Chenoweth ..... Elkins
R. J. Condry ..... Elkins
H. A. Conrad ..... Military Service
Edwin J. Euphrat ..... Elkins
B. I. Golden ..... Elkins
T. M. Goodwin ..... Elkins
P. L. Gray ..... Elkins
C. H. Hall ..... Elkins
W. G. Harper ..... Elkins
E. M. Jeffries ..... Philippi
L. S. King ..... Philippi
Fritz Levy ..... Elkins
B. L. Liggett ..... Mill Creek
L. U. Lumpkin ..... Elkins
Emory H. Main ..... Philippi
Joseph E. Martin ..... Elkins
G. H. Michael ..... Belington
J. L. Miller ..... Thomas
S. G. Moore ..... Elkins
Franklin B. Murphy ..... Galloway
E. E. Myers ..... Philippi
H. C. Myers ..... Philippi
K. J. Myers ..... Philippi
Donald R. Roberts ..... Elkins
S. J. Skar ..... Davis
W. S. Smith ..... Philippi
C. G. Stroud ..... Brownton
S. Weisman ..... Parsons
W. E. Whiteside ..... Parsons
J. R. Woodford ..... Philippi
T. L. Woodford ..... Junior
*J. L. Bosworth ..... Mill Creek
*A. M. Fredlock ..... Elkins
*E. M. Hamilton ..... Belington
*H. K. Owens ..... Elkins

BOONE COUNTY

W. L. Barbour ..... Whitesville
Paul R. Gerhardt ..... Van
A. E. Glover ..... Madison
W. F. Harless ..... Madison
R. L. Hunter ..... Madison
A. C. Lewis ..... Seth
C. E. Lewis ..... Nellis
D F. Pauley ..... Jeffrey
F. G. Prather ..... Wharton

BROOKE SOCIETY

W. T. Booher ..... Wellsburg
F. T. Dare ..... Wellsburg
H. L. Hegner ..... Wellsburg
S. S. Jacob ..... Bethany
F. L. Matson ..... Wellsburg
Ralph McGraw ..... Follansbee
J P. McMullen ..... Wellsburg
R. C. Otte ..... Wellsburg
S. D. Steiner ..... Wellsburg

CABELL SOCIETY

J. H. Baber ..... Huntington
Evelyn Ball ..... Huntington
†J. F. Barker ..... Huntington
†H. E. Beard ..... Huntington
†W. F. Beckner ..... Huntington
†O. B. Biern ..... Huntington
†J. R. Bloss ..... Huntington
R. M. Bobbitt ..... Huntington
†Clarence H. Boso ..... Huntington
†W. D. Bourn ..... Barboursville
†J J. Brandabur ..... Huntington
B. F. Brown ..... Huntington
†F. A. Brown ..... Huntington
†J. R. Brown ..... Huntington
W. F. Bruns ..... Ceredo
E. Norval Carter ..... Huntington
V. L. Chambers ..... Huntington
†Leo Christian ..... Huntington
W. L. Claiborne ..... Berwind
†F. L. Coffey ..... Huntington
†J. R. Cook ..... Huntington
†Robt. W. Coplin ..... Huntington
D. J. Cronin ..... Huntington
†R. H. Curry ..... Barboursville
†W. F. Daniels ..... Huntington
Ross Dodson ..... Huntington
C. S. Duncan ..... Huntington
F. F. Farnsworth ..... Milton
J. W. Ferguson ..... Kenova
T. G. Folsom ..... Huntington
†C. P. S. Ford ..... Huntington
J. C. Ford ..... Huntington
J. D. B. Galloway ..... Military Service
L. B. Gang ..... Huntington
†E. W. Garred ..... Milton
B. D. Garrett ..... Kenova
C. D. Genge ..... Huntington
E. B. Gerlach ..... Huntington
†W. O. Grimm ..... Huntington
A. P. Gibson ..... Huntington
J. A. Guthrie ..... Huntington
†O. L. Hamilton ..... Huntington
†J. C. Hardman ..... Huntington
R. Hardwick ..... Huntington
†I. R. Harwood ..... Huntington
H. D. Hatfield ..... Huntington
C. M. Hawes ..... Huntington
†Douglas Hayman ..... Huntington
J. S. Hayman ..... Huntington
I. C. Hicks ..... Huntington
†I .I. Hirschman ..... Huntington
F. C. Hodges ..... Huntington
C A. Hoffman ..... Huntington
F. J. Hoitash ..... Huntington
J. E. Hubbard ..... Huntington
P. M. Huddleston ..... Huntington
†E. J. Humphrey ..... Huntington
†W. B. Hunter ..... Huntington
†J. L. Hutchison ..... Huntington
W. E. Irons ..... Huntington
G. D. Johnson ..... Spencer
A. S. Jones ..... Huntington
A. T. Jordan ..... Winfield
W. C. Kappes ..... Huntington
J. R. Kessee ..... Huntington
†Dorsey Ketchum ..... Huntington
A. D. Kessler ..... Huntington
A. K. Kessler ..... Huntington
†J. S. Klumpp ..... Huntington
H. V. Lusher ..... Huntington
G. M. Lyon ..... Huntington
A. R. MacKenzie ..... Huntington
F. O. Marple ..... Huntington
†W. B. Martin ..... Huntington
G. O. McClellan ..... Hamlin
Hallock Moore ..... Huntington
L. J. Moore ..... Huntington
M. B. Moore ..... Huntington
†T. W. Moore ..... Huntington
G. C. Morrison ..... Huntington
H. E. Muller ..... Huntington
†W. E. Neal ..... Huntington
W. L. Neal ..... Huntington
†W. J. Parsons ..... Huntington
W. S. Porter ..... Wayne
†G. A. Ratcliff ..... Huntington
†E. F. Reaser ..... Huntington
†C. O. Reynolds ..... Huntington
†L. C. Richmond ..... Milton
J. W. Rife ..... Kenova
W. N. Rowley ..... Huntington
†A. G. Rutherford ..... Huntington
F. X. Schuller ..... Huntington
F. A. Scott ..... Huntington
R. M. Sloan ..... Huntington
†J. H. Steenbergen ..... Huntington
Roscoe Stotts ..... Kenova
W. W. Strange ..... Huntington
†W. C. Swann ..... Huntington
C. T. Taylor ..... Huntington
Ewing Taylor ..... Huntington
†I. W. Taylor ..... Huntington
†R. S. Van Metre ..... Huntington
W. E. Vest ..... Huntington
G. W. Walden ..... West Hamlin
Stanley Weinstein ..... Huntington
†R. J. Wilkinson ..... Huntington
C. A. Willis ..... Huntington
C. G. Willis ..... Huntington
C. B. Wright ..... Huntington
R. M. Wylie ..... Huntington
*A. W. Crews ..... Huntington
*W. D. Hereford ..... Huntington

CENTRAL W. VA. SOCIETY

A. B. Bowyer ..... Elkview
E. S. Brown ..... Summersville
F. H. Brown ..... Summersville
G. O. Brown ..... Buckhannon
H. S. Brown ..... Sutton
C. C. Carson ..... Gassaway
J. M. Cofer ..... Bergoo
†R. G. Cutright ..... Buckhannon
†L. W. Deeds ..... Buckhannon
†J. B. Dodrill ..... Webster Springs
Hugh Dunn ..... Richwood
†J. C. Eakle ..... Sutton
O. O. Eakle ..... Sutton
†J. E. Echols ..... Richwood
W. E. Echols ..... Richwood
R. M. Ferrell ..... Webster Springs
E. L. Fisher ..... Gassaway
G. E. Godman ..... Jerryville
W. H. Gum ..... Buckhannon
†I. F. Hartman ..... Buckhannon
†G. D. Hill ..... Tioga
L. O. Hill ..... Camden-on-Gauley
†J. C. Huffman ..... Buckhannon
E. H. Hunter ..... Webster Springs
F. A. Irmen ..... Weston
A. E. Long ..... Weston
J. N. Marquis ..... Richwood
James McClung ..... Richwood
M. T. Morrison ..... Sutton

William Nelson.....Richwood
B. L. Page.....Buckhannon
J. A. Rusmisell.....Buckhannon
H. O. Van Tromp.....French Creek
*S. P. Allen.....Webster Springs
*Fleming Howell.....Buckhannon
*W. H. McCauley.....Sutton
*J. L. Pifer.....Buckhannon
†*Everett Walker.....Adrian

DODDRIDGE SOCIETY

F. G. Harper.....West Union
A. Poole.....West Union
R. S. White.....West Union

EASTERN PANHANDLE SOCIETY

A. W. Armentrout.....Martinsburg
E. H. Bitner.....Martinsburg
R. E. Clapham.....Martinsburg
A. B. Eagle.....Martinsburg
M. R. Fox.....Charles Town
Marshall Glenn.....Charles Town
V. L. Glover.....Martinsburg
J. K. Guthrie.....Martinsburg
W. L. Halton.....Martinsburg
J. C. Helm.....Hedgesville
N. B. Hendrix.....Martinsburg
C. C. Johnson.....Harpers Ferry
Vaughn Link.....Shepherdstown
G. O. Martin.....Martinsburg
Elizabeth McFetridge.....Shepherdstown
G. P. Morison.....Charles Town
H. N. Moser.....Shepherdstown
Max Oates.....Martinsburg
T. K. Oates.....Martinsburg
M. H. Porterfield.....Martinsburg
C. G. Power.....Martinsburg
Compton Riely.....Martinsburg
D. J. Shaw.....Berkeley Springs
R. B. Talbott.....Martinsburg
H. G. Tonkin.....Martinsburg
J. L. Van Metre.....Charles Town
W. A. Wallace.....Martinsburg
Halvard Wanger.....Shepherdstown
Z. J. Waters.....Martinsburg

FAYETTE COUNTY

N. G. Angstadt.....Fayetteville
O. D. Ballard.....Elverton
†A. E. Bays.....Montgomery
Philip L. Becker.....Kimberley
F. W. Bilger.....Maybeury
†W. P. Bittinger.....Summerlee
†B. F. Brugh.....Montgomery
W. E. Bundy.....Minden
D. L. Butterfield.....Military Service
N. L. Cardey.....Winona
G. O. Crank.....Lawton
Gilbert Daniel.....Alloy
Guy Daugherty.....Fayetteville
T. B. Daugherty.....Fayetteville
†W. B. Davis.....Elkridge
C. H. Englefried.....Montgomery
John L. Feldman.....Longacre
C. A. Fleger.....Ansted
†George Fordham.....Powellton
†Claude Frazier.....Montgomery
Norman Friedman.....Military Service
Geo W. Grafton.....Thurmond
L. R. Harless.....Gauley Bridge
G. C. Hedrick, Jr.....Glen Ferris
†G. G. Hodges.....Mt. Hope
†Ralph Hogshead.....Montgomery
L. I. Hoke.....Nitro
M. G. Hresan.....Minden
A. L. Hunter.....Pax
C. C. Jackson.....East Rainelle
E. E. Jones, Jr.....Mount Hope
†Harold Jones.....Montgomery
T. K. Laird.....Montgomery
W. R. Laird.....Montgomery
H. C. Martin.....Rainelle
M. W. McGehee.....Montgomery
†C. G. Merriam.....Beard's Fork
†M. A. Moore.....Longacre
N. G. Patterson.....McKendree
†R. S. Peck.....Cannelton
Thos. B. Pope.....Kingston
†P. E. Prillaman.....Scarbro
B. F. Puckett.....Oak Hill
J. N. Reeves.....Oak Hill
H. H. Ritter.....Montgomery
J. L. Roark.....Powellton
†H. C. Skaggs.....Montgomery
†G. A. Smith.....Montgomery
†C. W. Stallard.....Montgomery
†E. B. Thompson.....Montgomery
†H. F. Troutman.....Page
J. B. Thompson.....Scarbro
†R. A. Updike.....Montgomery
J. F. Van Pelt.....Oak Hill
†C. E. Watkins.....Harvey
*O. J. Henderson.....Montgomery
*J. S. Shaffer.....Montgomery
†*D. W. Shirkey.....Montgomery

GREENBRIER VALLEY SOCIETY

O. P. Argrabrite.....Alderson
J. M. Brown.....Alderson
G. M. Caldwell.....White Sulphur Springs
R. C. Cecil.....Rainelle
J. W. Compton.....Ronceverte
J. R. Crawley.....Anjean
A. D. Ferrell.....Ronceverte
H. L. Goodman.....Ronceverte
H. D. Gunning.....Ronceverte
Guy Hinsdale.....White Sulphur Springs
A. G. Lanham.....Ronceverte
J. G. Leech.....Quinwood
Allen E. LeHew.....Lewisburg
C. W. Lemon.....Lewisburg
C. F. Mahood.....Alderson
Stephen Mamick.....White Sulphur Springs
T. G. Matney.....Peterstown
E. W. McCauley.....Rainelle
C. F. McClintic.....Williamsburg
S. A. McFerrin.....Renick
W. E. Myles.....White Sulphur Springs
D. G. Preston.....Lewisburg
N. R. Price.....Marlinton
Edda Von Bose.....Alderson
C. I. Wall.....Rainelle
*J. W. De Vebre.....Ronceverte
*H. L. Kirkpatrick.....White Sulphur Springs

HANCOCK SOCIETY

G. L. Beaumont.....New Cumberland
M. Bogarad.....Weirton
T. H. Bruce.....New Cumberland
G. H. Davis.....Weirton
J. E. Fisher.....New Cumberland
Israel Levendorf.....Weirton
A. E. McClue.....Charleston
E. R. McNinch.....Military Service
F. E. Polen.....Hollidays Cove
M. H. Powers.....Weirton
V. Prioletti.....Weirton
J. E. Richmond.....Weirton
George Rigas.....Weirton
A. B. Rinehart.....Weirton
L. O. Schwartz.....Weirton
T. H. Slate.....Hollidays Cove
A. C. Sunseri.....Weirton
J. L. Thompson.....Weirton
L. A. Whitaker.....Weirton
Milton Wolpert.....Chester
Anthony Yurko.....Hollidays Cove

HARRISON COUNTY

†W. H. Allman.....Clarksburg
†B. S. Brake.....Clarksburg
E. H. Brannon.....Bridgeport
†J. T. Brennan.....Clarksburg
J. D. Brown.....Lost Creek
†J. R. Carder.....Clarksburg
†F. C. Chandler.....Bridgeport
†R. S. Coffindaffer.....Shinnston
†I. D. Cole.....Clarksburg
†D. P. Cruikshank.....Lumberport
L. J. Currence.....Clarksburg
Edward Davis.....Salem
†W. M. Davis.....Bridgeport
†H. H. Esker.....Clarksburg
†G. F. Evans.....Clarksburg
Marcus E. Ferrell.....Clarksburg
†C. F. Fisher.....Clarksburg
Earl N. Flowers.....Clarksburg
F. G. Genin.....Clarksburg
Joseph Gillman.....Clarksburg
†Thomas Gocke.....Clarksburg
†W. T. Gocke.....Clarksburg
†H. H. Golz.....Clarksburg
Sylvia Grant.....Bridgeport
†C. C. Greer.....Clarksburg
†S. S. Hall.....Clarksburg
T. G. Harris.....West Milford
†H. H. Haynes.....Clarksburg
Ben E. Hodge.....Clarksburg
R. C. Hood.....Washington, D. C.
W. C. Huffman.....Spelter
R. T. Humphries.....Clarksburg
†Kenna Jackson.....Clarksburg
†C. C. Jarvis.....Clarksburg
A. O. Kelley.....Wallace
†A. J. Kemper.....Lost Creek
†John C. Kerr.....Clarksburg
†O. W. Ladwig.....Wilsonburg
F. V. Langfitt.....Clarksburg
J. F. Lembright.....Clarksburg
†R. B. Linger.....Clarksburg
D. H. Lough.....Clarksburg
†R. V. Lynch.....Meadowbrook
J. S. Maloy.....Shinnston
†John F. McCuskey.....Clarksburg
J. P. McGuire.....Clarksburg
†L. H. Mills.....Clarksburg
L. E. Neal.....Clarksburg
R. B. Nutter.....Enterprise
R. B. Nutter, Jr.....Lumberport
†R. J. Nutter.....Clarksburg
C. R. Ogden.....Clarksburg
R. L. Osborn.....Clarksburg
W. T. Owens.....Clarksburg
†J. E. Page.....Clarksburg
C. L. Pearcy.....Salem
E. Pendleton.....Clarksburg
A. T. Post.....Clarksburg
†C. O. Post.....Clarksburg
S. H. Post.....Volga
†James Ralston.....Clarksburg
A. T. Repass.....Military Service
†James Repass.....Lumberport
Wm. Riheldaffer.....Romney
R. M. Riley.....Nutter Fort
C. N. Slater.....Clarksburg
†H. E. Sloan.....Clarksburg

†W. W. Spelsburg ..... Clarksburg
L. O. Spencer ..... Shinnston
J. E. Stephenson ..... Clarksburg
W. L. Strother ..... Salem
†H. V. Thomas ..... Clarksburg
E. D. Tucker ..... Nutter Fort
Andrew J. Weaver ..... Clarksburg
E. F. Wehner ..... Clarksburg
H. A. Whisler ..... Clarksburg
B. W. Wilkinson ..... Clarksburg
J. F Williams ..... Clarksburg
†J. F. Williams, Jr ..... Clarksburg
†J. E. Wilson ..... Clarksburg
L. S. Wornal ..... Shinnston
†E. B. Wright ..... Clarksburg
*A. O. Flowers ..... Clarksburg
*E. Newton Flowers ..... Clarksburg
*John Folk ..... Bridgeport
*E. A. Hill ..... Clarksburg
*T. M. Hood ..... Clarksburg

KANAWHA SOCIETY

M. Albrecht ..... Charleston
A. E. Amick ..... Charleston
†A. L. Amick ..... Charleston
Maury Anderson ..... Dunbar
†R. L. Anderson ..... Charleston
†H. W. Angell ..... Charleston
H. Ashman ..... Gallagher
R. E. Baer ..... So. Charleston
†H. A. Bailey ..... Charleston
R. W. Bailey ..... Hurricane
†H. E. Baldock ..... Charleston
Ernest Ball ..... Charleston
†J. Bankhead Banks ..... Charleston
†D. N. Barber ..... Charleston
†T. M. Barber ..... Charleston
†Jack Basman ..... Charleston
Henry Baum ..... Charleston
†H. M. Beddow ..... Charleston
†S. L. Bivens ..... Charleston
W. P. Black ..... Charleston
†T. H. Blake ..... St. Albans
†O. H. Bobbitt ..... Charleston
Julius Boiarsky ..... Charleston
†M. L. Bonar ..... Charleston
†Bert Bradford, Jr ..... Charleston
John P. Brick ..... Charleston
H. M. Brown ..... Charleston
R. J. Brown ..... Charleston
Rex A. Burdette ..... Charleston
I. E. Buff ..... Charleston
†R. K. Buford ..... Charleston
J. E. Cannaday ..... Charleston
G. B. Capito ..... Charleston
F. B. Carlson ..... Charleston
Preston Champe ..... Charleston
A. C. Chandler ..... Charleston
†V. T. Churchman, Jr ..... Charleston
†F. A. Clark ..... Charleston
†W. L. Cooke ..... Charleston
E. A. Davis ..... Charleston
R. O. Dawson ..... Charleston
A. W. DeBell ..... Malden
†D. A. Dent ..... Charleston
†L. A. Dickerson ..... Charleston
M. S. Duling ..... Charleston
J. L. Dunlap ..... Bancroft
†R. H. Dunn ..... South Charleston
Leonard Eckman ..... Charleston
†F. L. Erwin ..... Burnwell
H. M. Escue ..... Indianapolis, Ind.
†H. H. Fisher ..... Dunbar
C. M. Fleshman ..... Clendenin
R. I Frame ..... Sharples
J. W. Frazier ..... Charleston
A. J. Given ..... Rensford
†H. R. Glass ..... Charleston
W. J. Glass ..... Sissonville
Dan Glassman ..... Charleston
J. R. Godbey ..... Charleston
A. T. Gordon ..... Spencer
Fred Gott ..... Charleston
J. E. Grace ..... Cabin Creek
†G. F. Grisinger ..... Charleston
J. L. Hager ..... Charleston
John B. Haley ..... Charleston
P. A. Haley, II ..... Charleston
†R. O. Halloran ..... Charleston
R. E. Hamrick ..... Charleston
R. S. Hamrick ..... St. Albans
J. H. Hansford ..... Pratt
W. L. Hardesty ..... Charleston
C. A. Harper ..... Clendenin
†O. M. Harper ..... Clendenin
E. R. Hays ..... Chelyan
G. P. Heffner ..... Belle
†E. B. Henson ..... Charleston
D. H. Hill ..... Charleston
†W. E. Hoffman ..... Charleston
†V. E. Holcombe ..... Charleston
C. L. Houck ..... Carbon
M. R. Houck ..... Carbon
H. H. Howell ..... Madison
A. P. Hudgins ..... Charleston
W. R. Hughey ..... Charleston
J. Ross Hunter ..... Charleston
T. H. Hutchinson ..... Malden
†R. A. Ireland ..... Charleston
†G. G. Irwin ..... Charleston
S. W. Jabaut ..... South Charleston
L. A. Jarrett ..... Dunbar
†E. V. Jordan ..... Charleston
C. R. Kessel ..... Ripley
†Ray Kessel ..... Charleston
†Russel Kessel ..... Charleston
R. D. Ketchum ..... Charleston
V. L. Lance ..... Charleston
J. C. Laslie ..... Charleston
H. D. Law ..... Charleston
J. P. Lilly ..... Charleston
A. C. Litton ..... Charleston
E. A. Litzinger ..... Charleston
†R. R. Louft ..... Charleston
Frank Ludwig ..... Charleston
V. E. Mace ..... Charleston
T. Paul Mantz ..... Charleston
C. B. Marshall ..... Nitro
L. B. Matthews ..... Charleston
†U. G. McClure ..... Charleston
†Ralph McLaughlin ..... Charleston
†W. A. McMillan ..... Charleston
†W. O. McMillan ..... Charleston
H. D. McPherson ..... Eskdale
†M. I. Mendeloff ..... Charleston
A. W. Milhoan ..... Nitro
O. N. Morison ..... Charleston
L. H. Mynes ..... Charleston
†T. W. Nale ..... Charleston
G. P. Naum ..... Glasgow
H. D. Nester ..... Cedar Grove
N. H. Newhouse ..... Charleston
E. W. Owen ..... Spencer
†R. E. Pence ..... South Charleston
J. T. Peters ..... South Charleston
†M. F. Petersen ..... Charleston
†V. L. Peterson ..... Charleston
S. H. Phillips ..... Charleston
†W. W. Point ..... Charleston
B. H. Pollock ..... Charleston
†W. C. Polsue ..... Charleston
C. W. Powell ..... Charleston
†Phillip Preiser ..... Charleston
A. M. Price ..... Charleston
†R. B. Price ..... Charleston
†W. J. G. Putschar ..... Charleston
Roy Ray ..... South Charleston
†T. G. Reed ..... Charleston
F. H. Reeder ..... Charleston
†F. C. Reel ..... Charleston
†P. H. Revercomb ..... Charleston
G. A. Rigrish ..... Charleston
G. C. Robertson ..... Charleston
†H. L. Robertson ..... Charleston
W. S. Robertson ..... Charleston
†J. H. Robinson ..... Charleston
†J. U. Rohr ..... Charleston
†J. E. Rucker ..... Charleston
C. F. Sayre ..... Charleston
C. N. Scott ..... Charleston
†Abraham Seletz ..... Charleston
J. H. Selman ..... Charleston
†Earl Shamblen ..... Charleston
†A. A. Shawkey ..... Charleston
W. S. Shepherd ..... Charleston
†W. F. Shirkey ..... Charleston
J. S. Skaggs ..... Montcoal
J. W. Skaggs ..... Nitro
B. A. Smith ..... Spencer
†C. B. Smith ..... Charleston
J. A. Smith ..... South Charleston
†S. B. Souleyret ..... Coalburg
E. P. Squire ..... Charleston
†Charles Staats ..... Charleston
†H. H. Staats ..... Charleston
†W. C. Stewart ..... Charleston
L. N. Strickland ..... Widen
H. A. Swart ..... Charleston
†B. H. Swint ..... Charleston
H. G. Thompson ..... Charleston
†W. A. Thornhill, Jr ..... Charleston
†P. A. Tuckwiller ..... Charleston
†E. O. Vaughan ..... St. Albans
†R. H. Walker ..... Charleston
R. L. Webb ..... Charleston
C. T. Whiteside ..... Kayford
W. V. Wilkerson ..... Prenter
†A. A. Wilson ..... Charleston
W. B. Wilson ..... Charleston
†H. B. Wise ..... Charleston
†R. E. Woodall ..... Charleston
†W. F. Work ..... Charleston
*E. H. Campbell ..... Alderson
*T. J. Casto ..... Charleston
*C. E. Copeland ..... Charleston
†*V. T. Churchman ..... Charleston
*B. S. Preston ..... Charleston
*W. B. Robertson ..... Belle
*G. C. Schoolfield ..... Charleston
*W. H. Wilson ..... St. Albans

LEWIS COUNTY

H. M. Andrew ..... Weston
G. M. Burton ..... Weston
S. H. Burton ..... Weston
H. R. Coleman ..... Weston
E. R. Cooper ..... Glenville
G. C. Corder ..... Jane Lew
C. R. Davisson ..... Weston
R. M. Fisher ..... Weston
O. L. Hudkins ..... Weston
D. P. Kessler ..... Weston
W. P. King ..... Weston
A. F. Lawson ..... Weston
J. A. Markley ..... Weston
J. E. Offner ..... Weston
R. O. Pletcher ..... Lost Creek
W. J. Riley ..... Weston
C. B. Rohr ..... Alum Bridge

W. T. Smith.....Glenville
Theresa Snaith.....Weston
George Snyder.....Weston
Guy Stalnaker.....Glenville
E. A. Trinkle.....Weston
*E. T. W. Hall.....Weston

LOGAN SOCIETY

Dewitt T. Bond.....Amherstdale
E. M. Bond.....Amherstdale
†F. E. Brammer.....Dehue
†W. E. Brewer.....Logan
†J. W. Carney.....Logan
Arthur Davidman.....Logan
†C. A. Davis.....Logan
†V. A. Deason.....Logan
H. H. Farley.....Logan
J. T. Ferrell.....Chapmansville
†A. M. French.....Logan
W. S. Gilmer.....Henlawson
Joseph L. Green.....Military Service
W. P. Hamilton.....Logan
I. M. Kruger.....Logan
L. W. Lawson.....Logan
L. H. Layman.....Military Service
†U. C. Lovejoy.....Omar
†J. W. Lyons.....Holden
†W. E Matthews.....Logan
W. T. McClellan.....Ethel
†D. T. Moore.....Stirrat
J. F. Morris.....Holden
E. R. Nelson.....Military Service
W. H. Parker.....Braeholm
†J. L. Patterson.....Holden
Owen Poling.....Mallory
R. W. Quaintance.....Lundale
†R. W. Roberts.....Man
W. S. Rowan.....Logan
†B. D. Smith.....Omar
T. C. Smith.....Slagle
†E. H. Starcher.....Earling
†L. E. Steele.....Logan
J. A. Stumbo.....Logan
Mark Sutphin.....Logan
†J. W. Thornbury.....Man
J. B. Traul.....Lorado
R. E. Traul.....Whitman
†Harold Vanhoose.....Mallory
G. D. Vaughan.....Holden
R. R. Vaughn.....McBeth
*L. L. Aultz.....Omar
*J. O. Hill.....Huntington
*S. B. Lawson.....Logan
†*F. L. Round.....Holden

MARION SOCIETY

L. E. Baron.....Military Service
J .M. Barr.....Worthington
†J. L. Blanton.....Fairmont
James M. Bonnar.....Fairmont
†C. J. Carter.....Fairmont
H. D. Causey.....Fairmont
J. B. Clinton.....Fairmont
J. C. Collins.....Fairmont
H. L. Criss.....Fairmont
†J. W. Davis.....Fairmont
†Geo. T. Evans.....Military Service
H. C. Fleming.....Fairmont
†C. T. Francis.....Fairmont
†R. R. Frye.....Mannington
D. D. Hamilton.....Mannington
†J. P. Helmick.....Fairmont
C. L. Holland.....Fairmont
†E. A. Holland.....Fairmont
†L. D. Howard.....Fairmont
J. J. Jenkins.....Farmington
†Phillip Johnson.....Fairmont
D. B. Jones.....Monongah
†H. S. Keister.....Fairmont
†C. L. Kinney.....Ida May
†L. R. Lambert.....Military Service
C. S. Lawson.....Fairmont
W. J. Leahy.....Mannington
†J. T. Mallamo.....Fairmont
J. S. Maxwell.....Fairmont
G. R. Miller.....Fairview
P. G. Moore.....Mannington
G. V. Morgan.....Fairmont
E. K. Munn.....Watson
†L. D. Norris.....Fairmont
†W. W. Orr.....Rachel
†C. L. Parks.....Fairmont
†P. F. Prioleau.....Fairmont
B. B. Rader.....Monongah
†C. M. Ramage.....Fairmont
†F. B. Rogers.....Fairmont
J. D. Romino.....Fairmont
F. F. Sowers.....Fairmont
†K. Y. Swisher.....Fairview
†J. M. Trach.....Fairmont
†J. P. Trach.....Fairmont
G. H. Traugh.....Fairmont
†J. R. Tuckwiller.....Fairmont
†Edw. Vacheresse, Jr.....Fairmont
†C. W. Waddell.....Fairmont
Clyde Watson.....Jordan
†W. A. Welton.....Fairmont
†E. D. Wise.....Everettsville
H. R. Yost.....Fairmont
Joe Yost.....Fairmont
Paul Yost.....Fairmont
†*G. H. Brownfield.....Fairmont
*C. O. Henry.....Fairmont
†*H. R. Johnson.....Fairmont

MARSHALL SOCIETY

Harold Ashworth.....Moundsville
R. A. Ashworth.....Moundsville
D. S. Bensen.....Moundsville
Wm. P. Bradford.....Moundsville
W. C. Boggs.....Cameron
B. F. Bone.....Moundsville
O. F. Covert.....Moundsville
D. B. Ealy.....Moundsville
R. B. Grimm.....Cameron
W. G. C. Hill.....Moundsville
J. H. Luikart.....Moundsville
L. H. McCuskey.....Moundsville
†W. E. McIlvain.....Moundsville
C. G. Morgan.....Moundsville
H. S. Parker.....McMechen
J. C. Peck.....Moundsville
J. A. Striebich.....Moundsville
O. P. Wilson.....Moundsville
S. F. Yoho.....Moundsville
*M. A. Dowler.....Glendale
*M. J. Fortney.....Hundred

MASON SOCIETY

R. F. Bryant.....New Haven
M. Koenigsburg.....Pt. Pleasant
C. W. Petty.....Hartford

McDOWELL SOCIETY

†J. H. Anderson.....Hemphill
†J. B. Bailey.....Davy
J. A. Bennett.....Algoma
G. B. Bowers.....Kimball
†A. H. Bracey.....Welch
H. A. Bracey.....Welch
R. K. Bragonier.....Keystone
†C. I. Butte, Jr.....Elkhorn
J. A. Campbell, Jr.....Coalwood
†H. G. Camper.....Welch
A. B. Carr.....War
†C. B. Chapman.....Welch
C. T. Clark.....Iaeger
†R. D. Clark.....Caretta
C. C. Cochrane.....Carswell
R. N. Cooley.....Coalwood
J. K. Cooper.....Premier
†N. F. Coulon.....Thorpe
†J. E. Davis.....Welch
L. E. Dunman.....Gary
†N. H. Dyer.....Bartley
R. H. Edwards.....Welch
†Boyce Elliott.....Hemphill
G. P. Evans.....Iaeger
†H. P. Evans.....Keystone
R. H. Fowlkes.....Crumpler
†Edmond Gates.....Welch
†F. H. Goodwin.....Welch
†W. C. Hall.....Welch
J. C. Harrison.....Bradshaw
D. D. Hatfield.....Yukon
†C. R. Hughes.....Kimball
†J. C. Hutchinson.....Welch
C. F. Jackson.....Raysal
†C. F. Johnston.....Welch
W. L. Johnston.....McDowell
Thornton Kell.....Bluefield, Va.
J. C. Killey.....Vivian
Peter G. Kroll.....Welch
F. E. La Prade.....Welch
E. E. Lovas.....Berwind
†J. L. McCarty.....Berwind
Sid Odell.....Switchback
I. T. Peters.....Maybeury
D. G. Rivers.....Gilliam
H. T. Schiefelbein.....Welch
R. V. Shanklin.....Gary
M. W. Smith.....Keystone
A. B. Spahr.....Newhall
P. C. Spangler.....Pageton
W. R. Strader.....Richlands, Va.
G. L. Straub.....Welch
M. F. Torregrossa.....Ashland
E. E. Vermillion.....Welch
J. S. Vermillion.....Welch
†C. W. Vick.....Jenkinjones
A. J. Villani.....Welch
†J. O. Warren.....Military Service
W. D. Wayne.....Marytown
V. L. Wetherby.....Welch
J. E. Whitehill.....Hemphill
L. L. Whitney.....Elbert
†Arnold Wilson.....Welch
†W. B. Young.....Northfork
*E. T. Cecil.....Berwind (Rainelle)
*S. A. Daniel.....Welch

MERCER SOCIETY

M. H. Bertling.....McComas
J. H. Bird.....Rock
Ben W. Bird, Jr.....Princeton
J. E. Blaydes.....Bluefield
A. M. Byrd.....Bluefield
B. S. Clements.....Matoaka
H. R. Connell.....Bluefield
H. C. Davis.....Bluefield, Va.
S. G. Davidson.....Bluefield
J. F. Fox.....Bluefield
P. R. Fox.....McComas
E. L. Gage.....Princeton
F. C. Goodall.....Matoaka

C. H. Goodykoontz, Jr. Bluefield
Daniel Hale Princeton
O. S. Hare Bluefield
L. W. Hewit Bluefield
A. H. Hoge Bluefield
F. F. Holroyd Princeton
F. J. Holroyd Princeton
E. W. Horton Bluefield
D. L. Hosmer Bluefield
O. G. King Bluefield
D. B. Lepper Bluefield
H. B. Luttrell Bramwell
J. I. Markell Princeton
John McGuire Bluefield
L. J. Pace Princeton
John S. Pearson Bluefield
C. J. Reynolds Bluefield
F. S. Richmond Bluefield
C. E. Roderick Bluefield
†R. O. Rogers Bluefield
C. T. St. Clair Bluefield
C. T. St. Clair, Jr Bluefield
W. H. St. Clair Bluefield
W. H. St. Clair, Jr Bluefield
C. M. Scott Bluefield
J. R. Shanklin Bluefield
M. W. Sinclair Bluefield
W. C. Slusher Bluefield
I. M. Smith Princeton
H. G. Steele Bluefield
R. R. Stuart Bluefield
E. M. Tanner Bluefield
G. L. Todd Princeton
A. C. Van Reenan Bluefield
T. E. Vass Bluefield
J. R. Vermillion Princeton
Uriah Vermillion Athens
Karl E. Weier Bluefield
H. J. Wiser Bluefield
A. D. Wood Bluefield
*S. R. Holroyd Athens

MINGO SOCIETY

R. M. Akers Kermit
G. W. Brewster Isaban
L. F. Boland Williamson
T. D. Burgess Williamson
W. H. Burgess Williamson
G. T. Conley Williamson
G. W. Easley Williamson
R. F. Farley Delbarton
J. C. Gaskel Williamson
H. C. Hays Williamson
O. P. Hodge Matewan
A. J. Holton Military Service
G. B. Irvine Williamson
J. C. Lawson Williamson
Ernest McClellan Williamson
C. E. Peery Sobato
Nathan Poliakoff Williamson
W. H. Price Chattaroy
F. B. Quincy Military Service
W. W. Scott Williamson
R. A. Salton Williamson
E. P. Stepp Kermit
J. A. Vickers Matewan
S. G. Zando Williamson

MONONGALIA SOCIETY

Dorsey Brannan Morgantown
C. M. Bray Morgantown
Peter Caserta Morgantown
L. W. Cobun Morgantown
A B. Collins Blacksville
S. W. Cottle Morgantown
H. M. Crow Morgantown
P. D. Crynock Morgantown
C. C. Fenton Morgantown
R. W. Fisher Morgantown
E. F. Heiskell Morgantown
W. H. Howell Morgantown
B. C. John Morgantown
Brinley John Morgantown
C. E. Johnson Morgantown
W. L. Madera Morgantown
G. R. Maxwell Morgantown
T. Jud McBee Morgantown
French R. Miller Morgantown
S. J. Morris Morgantown
W. C. Moser Morgantown
G. W. Phillips Morgantown
J. C. Pickett Morgantown
D. M. Post Morgantown
C. B. Pride Morgantown
C. C. Romine Morgantown
F. T. Scanlon Morgantown
W. B. Scherr Morgantown
James T. Stephens Pursglove
B. M. Stout Morgantown
R. R. Summers Morgantown
S. F. Talbott Morgantown
A. C. Taylor Mona
C. T. Thompson Morgantown
James Thompson Morgantown
J. H. Trotter Morgantown
E. B. Tucker Morgantown
E. J. VanLiere Morgantown
W. M. Warman Morgantown
*C. H. Maxwell Morgantow
*J. N. Simpson Morgantown
*C. B. Wylie Morgantown

OHIO SOCIETY

G. W. Abersold Wheeling
W. E. Ackerman Wheeling
†R. J. Armbrecht Wheeling
H. N. Azar Wheeling
R. B. Bailey Wheeling
J. T. Belgrade Wheeling
†C. S. Bickel Wheeling
E. S. Bippus Wheeling
J. D. Bird, Jr. Military Service
†S. S. Bobes Military Service
†R. C. Bond Wheeling
C. B. Buffington Wheeling
C. H. Clovis Wheeling
E. E. Clovis Wheeling
†J. R. Caldwell Wheeling
H. B. Copeland Wheeling
W. A. Cracraft Wheeling
F. H. Dobbs Wheeling
L. F. Dobbs Military Service
†T. F. Downing Wheeling
A. C. Earnest Wheeling
L. B. Farri Wheeling
†Ivan Fawcett Wheeling
Joseph M. Foley Wheeling
John S. Gaynor Wheeling
M. Gaydosh Wheeling
R. D. Gill Wheeling
†J. W. Gilmore Wheeling
E. F. Glass Wheeling
O. H. Griffith Wheeling
†N. L. Haislip Wheeling
†H. C. Harpfer Wheeling
A. W. Higgins Wheeling
†C. J. Holley Wheeling
†A. L. Jones Wheeling
E. L. Jones Wheeling
†W. K. Kalbfleisch Wheeling
C. H. Keesor Wheeling
T. M. Klug Wheeling
R. H. Lewellyn Elm Grove
†H. G. Little Wheeling
R. W. Lukens Wheeling
L. A. Lyon Wheeling
†D. A. MacGregor Wheeling
†W. T. McClure Wheeling
†J. H. McColl Wheeling
†A. V. McCoy Elm Grove
†C. G. McCoy Elm Grove
J. A. McCurdey Wheeling
†W. C. D. McCuskey Wheeling
W. H. McLain Wheeling
J. H. Murphy Wheeling
A J. Niehaus Wheeling
A. E. Nolte Wheeling
A. L. Osterman Wheeling
†R. M. Pedicord Elm Grove
†E. N. Pell Wheeling
†E. M. Phillips Wheeling
†E. S. Phillips Wheeling
†H. T. Phillips Wheeling
†R. W. W. Phillips Wheeling
†W. A. Quimby Wheeling
J. O. Rankin Wheeling
R. J. Reed Wheeling
R. J. Reed, Jr Wheeling
J. W. Ruckman West Liberty
W. P. Sammons Wheeling
H. R. Sauder Wheeling
†W. M. Sheppe Wheeling
Harry A. Smith Wheeling
R. J. Snider Wheeling
O. M. Staats Wheeling
J. K. Stewart Wheeling
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R. B. Engel ..... Glen White
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G. L. Pence ..... Hinton
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T. B. Gordon ..... New Martinsville
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C. M. Kimble ..... Paden City
F. E. Martin ..... New Martinsville
B. F. Matheny ..... Hundred
R. F. Miller ..... Paden City
J. W. Pyles ..... New Martinsville
L. P. Stanley ..... Pine Grove
John Theiss ..... New Martinsville
R. H. Zinn ..... Hundred

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D. D. Wilkinson ..... Wyco
E. M. Wilkinson ..... Pineville
Ward Wylie ..... Mullens

journment the members went to the Red Cross headquarters to help with sewing projects.

A dinner meeting will be held in January and the date will be announced later.

MRS. RALPH M. FISHER, *Secretary*.

Marion County

The Woman's Auxiliary to the Marion County Medical Society met on October 29 at the First Methodist Church parlors, so that the members could attend the annual turkey dinner served by the women of the church. The president, Mrs. C. L. Parks, presided and twenty-three members were present. The state auxiliary president, Mrs. H. V. Thomas, reviewed the progress of state auxiliaries, particularly Marion County Auxiliary and referred to past accomplishments and future goals to strive for.

Mrs. Carl Chandler, state *Hygeia* chairman, spoke on promoting *Hygeia* subscriptions.

Routine business was discussed.

On November 26, the Marion County Auxiliary met at the Fairmont Hotel, Fairmont. There were 23 members and two guests present.

Dr. J. B. Clinton and Dr. J. L. Blanton, auxiliary advisors, addressed the group on public relations. Mrs. John Helmick, state chairman of public relations, spoke on "What Our Organization Can do for the State Organization."

Next meeting will be held on January 28 at the Fairmont Hotel.

MRS. J. W. DAVIS, *Secretary*.

McDowell County

The Woman's Auxiliary to the McDowell County Medical Society met on October 11 at the Appalachian Club Room, Welch. Mrs. C. B. Chapman, president, called the meeting to order. There were 17 members and one guest present.

Mrs. J. H. Anderson gave a report from the state convention.

The charity project for the year was chosen—the Crippled Children's Fund. The new printed programs for the current year were approved.

On November 6, the auxiliary met at Miss Lewis' Tea Room, Welch, with 16 members and five guests.

Mrs. H. V. Thomas, state president and Mrs. John Helmick, public relations chairman, were guest speakers. Also, Mrs. P. A. Earley, executive

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chairman of the Crippled Children's Society spoke on her organization's work.

Individuals were asked to sew garments for England, and a report was made on the donations to the Crippled Children's Fund.

The December meeting was arranged for the eleventh at the Appalachian Club Room, Welch.

MRS. E. O. GATES, *Secretary*.

Raleigh County

The Woman's Auxiliary to the Raleigh County Medical Society met on November 18, for a luncheon at the Beckley Hotel. Mrs. E. Newton DuPuy, president, presided and 24 members were present.

Mrs. H. V. Thomas, state president, spoke on "Organization of Local, State and National Auxiliary." Mrs. S. S. Hall, state convention chairman, spoke on plans for the state convention at Charleston next May 12-14, 1941.

Plans were made to present subscriptions to *Hygeia* magazine to Pinecrest Sanitarium and also to the Public Library if not already placed there.

On Monday, December 16, Mrs. V. E. Holcombe, national auxiliary president, will be guest speaker at the meeting to be held in the Beckley Hotel.

MRS. HUBERT A. SHAFFER, *Secretary*.

Notice to Registered Nurses

The Council of National Defense of the American Nurses' Association is conducting a survey in January, 1941, of registered nurses throughout the United States, Alaska, Porto Rico and Hawaii.

In the interests of national preparedness, it is necessary that the potential registered nurse power of the United States be known. Our national nursing organization will not plan to increase the present supply of professional nurses until we know how many are actually available and will be free and able to serve in an emergency—at least in their own communities. This is done to avoid inflation of the profession and serious employment risks later.

This survey will be done in West Virginia through our ten district nurses' associations and our hospitals' personnel. Through women's clubs, parent-teacher associations, the auxiliaries of the medical association and that of the American Le-

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gion, as well as through magazines and newspapers, we are requesting that all registered nurses in West Virginia—married and unmarried, old and young, active and inactive (whether registered in this state or not) call their nearest hospital and leave their name and address for the questionnaire or send a postcard to the State Nurses' Association, Capital City Building, Charleston, W. Va.

—MADGE L. DUNCAN, *President, W. Va. State Nurses' Association.*

National Physicians' Committee

The postelection position, policy and program of the National Physicians' Committee has recently been made public through the office of Mr. John M. Pratt, executive administrator. The statement adopted by the N. P. C. Board of Trustees has already been mailed out to 157,000 physicians throughout the United States.

The N. P. C. statement points out that two years of aggressive effort in defining and clarifying the issue of political control of medicine, in unifying the profession and informing the public had produced spectacular results. The statement then cites the remarks made by President Roosevelt at Bethesda, Maryland, on October 31 in dedicating the National Institute of Health. Said President Roosevelt:

"Neither the American people nor their government intend to socialize medical practice any more than they plan to socialize industry. In American life the family doctor, the general practitioner, perform a service which we rely upon and trust.

"No one has a greater appreciation than I of the skill and self-sacrifice of the medical profession. And there can be no substitute for the personal relationship between doctor and patient which is a characteristic and a source of strength of medical practice in our land."

The N. P. C. feels that this public expression represents a notable and priceless gain. Under conditions now prevailing and in order not to lose any of the ground already gained, it was the unanimous opinion of the Board of Trustees that the operations of the N. P. C. be continued with increased

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vigor. In order to continue the work, the board has asked for a group of 10,000 physicians to form a "Three Cents a Day Club" for the duration of the war.

WITH OUR ADVERTISERS

Mead Johnson

In far too many homes, a breakfast of a roll and a cup of coffee is the fare for children as well as adults. Woefully deficient in vitamins and minerals, such a meal furnishes little more than a small amount of calories. A dish of pablum and milk, however, is just as easily prepared as a "continental breakfast," but furnishes a variety of minerals (calcium, phosphorus, iron, and copper) and vitamins (B_1 and G) not found so abundantly in any other cereal or breadstuff.

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Neighbor Journals

Football Injuries

Stingent rules of play, improved equipment and rigid systems of physical conditioning serve to safeguard today's football player against injury. These safety measures may be nullified by inadequate medical supervision during play or practice. It takes a strong-willed coach to resist sending in his injured star passer when dear Alma M. is a touchdown behind in the last two minutes, the crowd is yelling, the clock is ticking, and next year's contract depends on winning the close contest. Too often, the boy does go in, to be injured perhaps for life. It should not be left to the coach to say whether this boy plays or not. It is not fair to him or the player. Final authority as to who should or should not play at any given moment should rest with the team physician. Only he can be in position to judge the player's physical condition. Only he has the right to assume final responsibility for the physical welfare of the players.

Most organized games now have a physician in attendance. Rules of the El Paso school system forbid a scheduled game beginning until the team physician is on the field. Yet, what real good is his presence unless he has absolute veto over the desires of the coach to send into the fray players who may be injured? What may appear to be a trivial injury to an anxious, excited coach may well be a matter of serious consequence to the player and his physician. Study of the problem of football injuries has led to conclusions and findings which, applied thoroughly, have greatly lessened all manner of injuries, minor and serious, incurred on the field of practice and play. Today most injuries are known to occur on the nation's sand lots, where training and play are not medically supervised.

Few coaches would be guilty of sending an injured boy in to play. But there are persons who would do just about anything to win a game, and to hell with the consequences. For the sake of the grand old game and the boys who play it, the power of veto over such coaches' desires should rest irrevocably with the team physician.—*Southwestern Medicine.*

The widespread practice of self-medication with nasal oils must be discouraged, Paul R. Cannon, M. D., Chicago, warns.

Main Entrance

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What's in a Name?

We read of the formation in a nearby state of "The Anti-Medical Trust League."* The aims of this new "educational" organization are "to educate the public as to how the medical trust seeks to gain control over children in schools, health and educational boards as well as private agencies . . . . to effect abolition of medical trust control over chiropractors and drugless practitioners . . . . to advance, promote and protect philosophy, science, art and practice of chiropractic and drugless methods of healing."

Chiropractors and drugless healers aver that we are a trust.

Oliver Garceau, writing in the *Public Opinion Quarterly* for September, 1940,** alleges that, through the medical press, group sanctions, expulsions, boycott, and its politicians, organized medicine molds the opinions of the nation's doctors. Mr. Garceau is an instructor in government at Harvard and, like a bloodhound, follows the spoor and scent of this sinister organization (medicine, not Harvard) unerringly through twenty pages of swampy reading matter, all set about with fever trees, to its lair on page 428. Here, panting, he finds "the essence of the process (of moulding the opinion of the nation's doctors) is that familiar combination of the pen, the sword and the old-fashioned politician."

To all of these drugless healers, chiropractors, government, and Mr. Garceau we say: Ain't nature wonderful? Especially human nature. Here we have been thinking and acting all these years as though we were physicians, while all the time we were merely kidding ourselves. Just a bunch of ordinary run-of-the-mill monopolists, pen wielders, sword forgers, and old-fashioned politicians after all! What a surprise this will be to a great number of very earnest and sincere men who have spent their lives, day and night, healing the sick, comforting the dying, encouraging the well to stay well in spite of sickness insurance and other

* Modern Medicine, October, 1940.
**Vol. 4, No. 3, p. 408.

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discouragements! As we said: Ain't nature wonderful? Especially human nature! And more especially still, good nature!—*New York State Medical Journal.*

Why Specialty Boards?

For some time there has been developing an undercurrent of sullen, often just criticism of the conduct and standards of certain of the specialty examining boards. In some quarters the opinion is that too much politics enter into selection of successful candidates for the diplomas granted by these boards. It has been said, too, that the founders and early diplomates have, in a few instances, conspired to make it almost impossible for any but a research fellow or a teacher to pass the examinations. It is pointed out that, in the final analysis, the only purpose of these boards is to certify that a candidate is basically qualified to practice on human beings the specialty he professes.

Yet, whether any or all of the creed objections are valid, there does appear to be another side to the picture. It may be illustrated rather vividly by a recent occurrence in one of the "approved" hospitals of this territory. A young physician was called to consult with a practitioner who had not read a book or a medical journal or attended a formal medical meeting since he graduated from a class B school some 20 years ago. The case was an obscure, acute pelvic condition. The young consultant had been in practice but one year, following a general rotating interneship of 12 months. In his wisdom he decided to operate for an abdominal pregnancy. He was not qualified, by experience, training or certification, to undertake the care of such a case as cited. The outcome is best left untold.

This may be hanging dirty linen on the lines, and it certainly does not often happen. But the moral is plain—unless medical men regulate themselves even more stringently, boards or no boards, some other agency must!—*Southwestern Medicine.*

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Appendicitis

Appendicitis cannot be prevented, but within certain definite limitations few deaths, if any, need result from this disease, states Surgeon General Thomas Parran of the United States Public Health Service.

Nearly 14,000 people died from appendicitis in 1939. In 1937, the last year for which reliable information is available, the United States had the second highest death rate from appendicitis in the world. The disease strikes persons of both sexes; neither infants nor old people are spared.

This disease is an inflammation of the appendix, a dead-end part of the large intestine, about the size of the little finger, located in the lower right quarter of the abdomen.

The usual symptom is persistent pain in the abdomen. At first pain is apt to be in the pit of the stomach. Later, it may become sharp and cramp-life in the lower right side of the abdomen. The patient usually feels nauseated and may vomit.

If the sharp pain stops suddenly, the appendix has probably burst, and unless medical and surgical care are obtained without delay the chances of recovery are small. The poisons from the appendix are quickly absorbed by the lining of the abdomen, causing the spread of infection, and death from peritonitis results.

There is no medical cure for appendicitis. The most effective treatment for this disease is early and prompt removal of the inflamed appendix. There is little or no danger from the operation itself. The patient and his family have nothing to fear except the possible bad results of their own delay.

Appendicitis will disappear from the list of "killers" if the public will cooperate with the medical profession and follow these four simple rules:

1. Consider any abdominal pain as a dangerous sign.
2. When there is abdominal pain, do not take a laxative, drug, or enema.
3. If pain lasts more than two or three hours, call a physician. If pain is severe, call a doctor at once.
4. Until the physician arrives, apply an ice bag or other cold application over the painful area in the abdomen.—*Georgia Medical Journal.*

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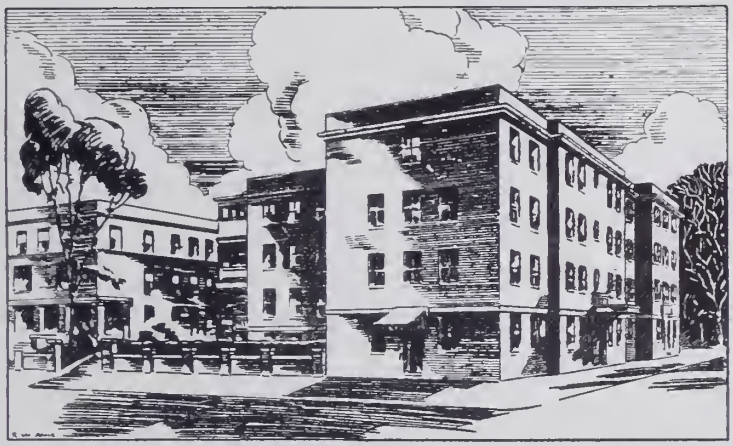

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Medical Testimony

A new plan for control of dishonest medical testimony, source of scandal for many years, both to the medical profession and the public, was officially adopted by the Council of the Minnesota State Medical Association at its regular fall meeting held Sunday, September 22, at the St. Paul Hotel.

This plan is the result of several conferences between a special committee appointed to study the question by President B. S. Adams of Hibbing and representatives of the Minnesota State Bar Association, who have also interested themselves in the problem. The conferees had the benefit, also, of advice from Justice Royal A. Stone of the Supreme Court of Minnesota, who is himself chairman of a judicial council appointed by the Minnesota State Legislature in 1937 to study rules and regulations and procedures of the judicial system of the state.

No change in legislation is contemplated in the plan submitted by Chairman E. M. Hammes of St. Paul and approved by the Council. Instead, a permanent Committee on Medical Testimony of the Minnesota State Medical Association will be formed. Services of this committee will be put at the disposal of any judge in the state who has reason to believe that medical testimony in any case decided in his court has deliberately deviated from the truth.

Judges will be invited to submit such cases to the committee for investigation and study. If, upon close investigation, it appears to the committee that the testimony of the physician was indeed dishonest, the case will be turned over, together with all findings, to the State Board of Medical Examiners for disciplinary action.

Offenders who are thus reported to the State Board will be subject to censure and warning or to suspension or revocation of their license to practice medicine, according to the judgment of the Board.

The seriousness of the problem of dishonest expert testimony has been recognized by representatives of organized medicine for many years. Many proposals have emanated both from physicians and lawyers for changes in the law which would eliminate entirely the hiring by litigants of medical experts. Legal authorities who conferred with the committee on the new plan of attack did not, however, favor any movement to change the law at the present time.—*Minnesota Medicine.*

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TUBERCULOSIS ABSTRACTS

concentrated tuberculosis at some of the camps, thinking that they would benefit by change of climate and by army life. In the re-examination of 19,827 men at Camp Kearny, for example, 853 cases of tuberculosis (4.83 per cent) were discovered.

With this background, what should our procedure be in the present situation? Of the available methods for the mass diagnosis of tuberculosis among recruits, physical examination and radiography need to be considered on a basis of relative merits. Evidence of the inadequacy of physical examination to detect tuberculosis is overwhelming. The last word so far as the army was concerned in 1917 was that "the only trustworthy sign of activity of apical tuberculosis is the presence of persistent moist râles." In the light of present-day knowledge this sign is worth only about 12.5 per cent. In spite of the acknowledged skill of the army examiners of 1917 only about one-eighth of the actually existent clinically significant tuberculosis was detected.

The radiograph should be the criterion in weeding out tuberculosis in today's mobilization. In what form? Fluoroscopy gives no record and is highly subjective. As demonstrated by the experience of a large life insurance company, fluoroscopy in skillful hands may serve as an alternative to a prohibitively expensive routine of röentgenography, but even this company has, since 1936, been making routine röentgenograms of the chest of every applicant for employment.

The paper röentgenogram is speedy and convenient and cheaper than celluloid. Radiologists as a whole do not favor the paper radiogram while tuberculosis workers are enthusiastic over it. If celluloid films were available on rolls like the paper rolls they would undoubtedly be preferred. Paper röentgenograms are vasty preferred to no röentgenograms but celluloid would be preferred if the author were given a choice.

"A normal chest röentgenogram should be the criterion of acceptance in a future mobilization, including the proposed draft for training, and it should be made and reported before the recruit has spent a night away from his own roof to obviate a repetition of the claims for aggravation of preexisting tuberculosis which occurred during and after the World War."

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INDUSTRIAL HEALTH: A MEDICAL OPPORTUNITY*

By C. M. PETERSON, M. D.
Chicago, Illinois

PRACTICING physicians in this country, by training and long custom, consider that the curative and preventive health needs of the population are best controlled by two agencies —public health administration and the private practice of medicine. They have seen no impelling reason why medical service to industry should not, in most cases, conform pretty largely to this basic pattern. They realize that the range of medical activity which falls under one or the other of these two important phases of industrial health is so widespread and frequently of such special character as to require the services of physicians in a number of categories of public and private employment. It has seemed to the practicing physician that none of these agencies will ever arrive at the position which will enable any one of them singly to shoulder the entire burden of the health conservation of workers.

It is convenient, if not entirely accurate, therefore, to classify physicians in industry according to whether preventive or remedial services preponderate in their ordinary activities, since under these headings occur most of the procedures from which individual workmen are likely to draw direct and immediate health benefits. At one end of the scale is the medically trained industrial hygienist, most often associated with public health administration. He is interested exclusively in the prevention of industrial disability and uses this interest, moreover, as an important avenue through which many of the problems of adult hygiene can be solved. His work affects groups rather than the personal hygiene problems of individuals. Next there is the industrial physician engaged largely in the practice of preventive medicine and surgery within industry itself, but whose

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*Read before the joint meeting of the Medical Society of Virginia and the West Virginia State Medical Association at White Sulphur Springs on July 29, 1940.

functions include also the treatment of accidents and diseases of occupational origin. As between the plant medical officer and the public health official, objectives differ only in the degree of detachment from conditions under observation and the amount of sustained personal interest which it is possible to develop in the health problems of the individual workers. Then there is the private practitioner, specialist or otherwise. Not infrequently he has refused to undertake any form of industrial medical activity. Much more commonly, however, he has been called upon by employers or insurance organizations to treat individual cases of industrial injury or disease. Up to the present time he has almost entirely overlooked industrial hygiene as a profitable extension of his own medical activity and as a means for positive contributions to the improved physical welfare of wage earners. It is no difficult concession to make, then, that physicians in each of these classifications have indispensable functions to perform for industry, that they should supplement and support each other and freely acknowledge their interdependence. The actual amount of medical activity which industry needs and which these varying types of physicians will be called upon to perform will vary considerably in keeping with local circumstances. What is of greater moment is that as industrial medical activity expands, the work of physicians in each of these categories is certain to increase rather than otherwise.

HEALTH PROGRAMS

In this connection it is interesting to classify some of the reasons why the private physician has neglected to participate more fully in accident and disease prevention and in the promotion of health programs for industrial workers. This attitude proceeds naturally from the way industrial medicine and surgery developed. At the outset interest was almost entirely centered upon problems of surgical repair and rehabilitation. A much more potent reason is that medical education has not been at all helpful in developing a real appreciation of the effects of occupation on health and the best means for establishing control. The amount of time necessarily spent in medical schools on individualized case study and management has prevented the assignment of sufficient attention to the principles of health conservation of groups and to the recognition and arrest of incipient disease which constitute, to a very considerable extent, the principal motivations behind the whole field of industrial health. Many physicians have intentionally withheld cooperation from the industrial health movement because of a real concern that adequate standards of medical practice could not be successfully transferred into the industrial picture because of industry's unwillingness or inability to support them. Physicians have had other misgivings about industrial medicine, such as the lack of essential qualifications of many who have undertaken this type of activity, its not infrequent status as exploited dispensary work under conditions where employer interest is too commonly interpreted as the proper function of an industrial medical service, and the methods used by some physicians to compete unfairly, not only in industrial practice but in private practice through industrial connections. Another large contributor to distaste for certain phases of industrial practice relates to the varying nature of workmen's compensation administration, largely centering in the absence of qualified medical representation in, or advisory to, compensation commissions, the illogical limitations which have been set up in relation to medical and hospital care for industrial disability and in respect to free choice of physician.

GREATER PARTICIPATION EXPECTED

Is it safe to assume, then, that in the light of these unsatisfactory experiences the practicing physician will be willing to improve and expand his participation in industrial medical activity? Such an expectation at the present time seems entirely justified. In the first place, the growing interest of the worker and his labor organizations is compelling in-

dustry, the government, and the medical professsion to investigate and recognize the important effects which occupation can have on physical well-being. The extension of workmen's compensation benefits in all but two states, particularly the assignment of benefits for occupational disease, is a most potent factor for the rapid expansion of professional interest. Johnstone has recently stated:[1]

"Today twenty-two states make provision for all or some occupational diseases. Ominous signs indicate their rapid inclusion by the remaining states. After such enactments the responsibility shifts from a few to all physicians. The existing system of consigning the sudden fracture or laceration to the plant or company physician will continue. In such cases the causative factors are rarely in doubt. But the workman with insidious disease will consult his family or neighborhood physician on whom will be imposed the duty of determining whether the patient's condition is occupational or non-occupational in origin. In every city, hamlet, mining center or farming district a workman's ill health will become a medico-legal problem."

PHYSICAL EXAMINATIONS IMPORTANT

Lately recommendations of unusual importance regarding physical examinations have been issued by the Wisconsin Industrial Commission, under the conviction that such practices are as great a factor in the maintenance and upbuilding of the health of workers as engineering control over specific industrial exposures. It takes no unusual insight to realize that if this practice spreads, many more physicians will be called upon to apply the principles of preventive medicine in industry.

Furthermore, present day technical development in industry is enormous. Health hazards multiply so rapidly as to leave distinct gaps between recognition of the causative agency and the perfection of medical and engineering methods designed to cope with them. Progress will occur only as this lag is overcome by infusing all available knowledge about occupational health exposures into the practicing medical profession as promptly as possible. The rapid increase in governmental facilities, both federal and state, for investigation and control of occupational health exposures will assist greatly in this respect. All these agencies — manufacturers' associations, trade unions, insurance carriers, compensation and other governmental agencies, have great interest in establishing the social and humanitarian values of control over industrial accident and disease. Medical organization, therefore, has a constructive influence to exert on industrial medical standards, since no other agency is in good position to evaluate medical procedure or facilitate its direct application into actual practice. To accept leadership in this field is directly in keeping with medical tradition in other specialties.

NATIONAL DEFENSE

Added to these fundamental reasons for professional interest in industrial health are related problems of utmost importance associated with national defense. A recent editorial in *The Journal of the American Medical Association* has stated:[2]

"Modern warfare depends on industrial production. The skilled worker becomes of importance equal to that of the man under arms; his indispensability grows as it becomes difficult or impossible to replace him. Shortages are said to exist now in certain classifications of experienced craftsmen. The problem then is not solely one of educating new workers, since long periods of apprenticeship are necessary to acquire dependable ability. More important is the task of guarding the existing supply of competent and skilled workers against preventable disability."

In relation to national defense, then, the real importance of industrial health assumes proper proportion. It is satisfying to realize that the medical profession will be much better prepared than it was twenty-five years ago to shoulder these added responsibilities, both under the pressure of preparedness as well as a continuing activity.

After consideration of these and other factors, the Council on Industrial Health of the American Medical Association has stated

its belief that standards of medical service in industry must be raised and safeguarded both as to scope and adequacy. To accomplish these purposes it relies primarily on medical self-discipline and education. We have, therefore, attempted to visualize a practical working arrangement which will establish an industrial health committee in every county medical society where the degree of industrialization seems to warrant it. The membership, it is hoped, should contain representation from the fields of private practice, industrial practice, and from the local public health agency. Committees such as these ought to be of genuine value, since it is in the county medical societies where acute problems of industrial practice are encountered and can be directly dealt with. We believe that through some such mechanism much of the friction which has on occasion characterized medical relationships in industry will disappear. We hope that herein will lie at least a partial solution for the small plant employer and his employees interested in deriving benefits from advances in industrial hygiene but who, in the past, have found themselves unprepared or unable to do so.

SUGGESTED PROGRAM

A program has been developed for these committees which will coordinate local resources for general or special industrial health activity. Competent sources of information about the character of local industrial operations should be established and the important health problems of each, and education should be concentrated upon these local problems. The activities of other community organizations interested in industrial health problems should be investigated in order to determine how they may be in better position under medical leadership to contribute to the physical betterment of the workers and without duplication of effort. There will be many opportunities to promote better professional education and to acquaint the general public with the accomplishments in industrial medical practice and the intention of the whole medical profession to elevate standards in this field. Interesting contributions along these lines of procedure have already been made by county societies.

These local committees will act under the guidance of committees on industrial health in state medical associations, the membership of which again might well contain representation from the three principal components mentioned above. A platform has been suggested for these state committees as follows:

1. To develop on the part of all physicians a good understanding of the proper functions of medical organization in industry.
2. To train physicians to recognize and report occupational diseases promptly.
3. To train industry and labor to the value of industrial health conservation.
4. To elevate medical standards under workmen's compensation.
5. To scrutinize all social legislation affecting the health of industrial workers.
6. To clarify relationships between industrial and private practitioners.
7. To improve relationships between physicians and insurance carriers.
8. To establish working relationships with all state agencies interested in industrial health.
9. To extend as far as possible activities of this same description into county medical societies.

Finally, to take advantage of the structure of our medical organization, arrangements have been made for the interchange of information between the local and state committees and the Council on Industrial Health of the American Medical Association, the general effect of which should be to hasten the realization of our program and to facilitate the training of physicians.

Certainly the health needs of industry represent a very considerable opportunity for medical achievement open to qualified physicians on the basis of personal initiative. The field, in fact, is largely unexplored. McCord, as early as 1932, stated the case well in the following words:[3]

"Adequate industrial medicine and sanitation is now applied to not more than four per cent of this country's industries. No less than 5,000 factories and mercantile establishments in the United States are of such size as to warrant the full-time services of one or more well-trained and well-paid physicians. This number does not include as 'factories' such enterprises as mining, transportation, forestry industries, communication, public service, banking and education. Some doubt may exist that the physician in a mining community, serving the entire population, or the railroad surgeon, doing only traumatic surgery, should be classed as industrial physicians. However, if it may be agreed that such borderline activities should be so recognized, it is reasonable to believe that no less than 12,000 physicians may advantageously be utilized in this branch of medicine. The term 'advantageously' as just used, embraces the interests of the worker, his employer, the industrial physician, and the medical profession as a whole. Fifty-four million dollars, the approximate sum annually paid as salary for this potential group, is but a small fraction of the monetary savings that their highly qualified services may effect in industry. If it is agreed that a prime function of the medical profession is to apply to the public those health and life conserving measures proved by scientific endeavor to be efficacious, it must be recognized that the organization and requirements of industry afford one of the few sustained opportunities for the legitimate exegesis of medicine to adult groups."

MEDICAL LEADERSHIP

The health needs of industry are crystallizing and a high grade of medical leadership is demanded. Major reforms are needed in the industrial medical field and they can be accomplished. The medical profession as a whole must properly orientate itself in this vast field. To do so the objectives and accomplishments of all interested agencies in medicine and outside of it must be known. There has too often been failure to bring this information to the practicing physician in the past, a failure which must be recognized and surmounted if the full scope of professional development in industrial health is to be attained.

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Radio Interference

"Standards for reducing interference with radio communications resulting from the use of diathermy apparatus (for generating heat in body tissues by means of electrical currents) are sorely needed," *The Journal of the American Medical Association* for January 25 declares. "The Federal Communications Commission recently held an informal engineering conference in Washington with representatives of the medical profession and of the manufacturers of electromedical equipment to consider this subject. The medical profession was officially represented by members of the Council on Physical Therapy of the American Medical Association. In this conference the spokesman for the commission said that the commission recognized the importance of diathermy for the treatment of human ills and reiterated the desire of the commission to cooperate with the medical profession and with the manufacturers.

"At the Inter-American Radio Communication Conference, Santiago, Chile, in 1940 it was decided that countries in the Western Hemisphere 'shall adopt measures to suppress or alleviate as much as possible interference caused by apparatus or equipment which may generate or radiate radiofrequency currents capable of interferring with or adversely affecting the reception of radio transmissions.' One method to eliminate interference is to design diathermy apparatus to operate on definite frequencies and allocate these channels for this purpose only. The spokesman for the manufacturers asked for the allocation of three bands corresponding approximately to 23, 11.5 and 7.67 meters, the width of the bands to be comparable to ten broadcast channels at 23 and 7.67 meters and forty channels at 11.5 meters or sixty broadcast channels in all."

CHEMOTHERAPY IN ACUTE BACILLARY DYSENTERY*

PART II—CLINICAL USE OF SULFANILYLGUANIDINE

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An experimental study on sulfanilylguanidine has recently been published by Marshall and his associates.[1] A remarkable feature of this chemical is that although fairly soluble in water it is absorbed relatively poorly from the gastrointestinal tract. Because of this it is possible to build up therein a high concentration (200 mg. per cent) without exceeding a relatively low concentration in the blood (1 to 4 mg. per cent.) More recently Marshall and his co-workers[2] have described the use of the drug in the treatment of acute bacillary dysentery in infants and young children. In their series, successive patients were treated and there was no control group. In the present study, an attempt has been made to evaluate the effect of the drug in the treatment of acute bacillary dysentery by comparing one group of patients treated with the drug, with another group of patients who did not receive the drug. Using the method of selecting alternate patients for treatment with the drug, 23 patients received it and a like number did not.

BACKGROUND

Bacillary dysentery occurs endemically in the rural and mountainous mining areas of West Virginia and in the tri-state section of West Virginia, Kentucky and Ohio.[3a, b]

This area afforded a good opportunity for studying the effects of sulfanilylguanidine in a series of patients with acute bacillary dysentery. That the Flexner bacillus is responsible for fully 80 per cent of the cases of bloody diarrhea (bloody flux) occurring in these areas has been reliably established and previously described.[3b] While encountered with considerably less frequency now than some 10 to 15 years ago, bacillary dysentery continues to be in this area a common and important cause of morbidity. In the past decade, there has been a remarkable decrease in the number of cases observed in residents of the urban districts. Now, the majority of the cases originate in those adjoining rural areas where community sanitation has been most neglected and to a much lesser extent in those rural areas where community sanitation has been better developed, and least of all in the urban centers. It has been possible to secure relatively large numbers of cases for the present study only because of the cooperative efforts of twenty-four physicians scattered throughout the areas described. They kindly made their patients available for study, and in so doing made it possible to include practically all of the dysentery patients to be admitted to eight hospitals scattered throughout the area which extended for more than 75 miles to the north and to the west of Huntington, West Virginia, and more than 125 miles to the east and to the south of the same point. The study was initiated in the latter half of September and was completed in December, 1940.

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All studies and recordings have been made in accordance with a prearranged plan. Systematic observations and recordings have been made on all patients included in the study. While not all patients have been in one locality, or have even been hospitalized, they have, however, all been supervised in such a manner that standard procedures have been followed and appropriately reliable observations obtained.

In selecting patients for study, an attempt was made to include only those patients presenting such a clinical picture as would warrant the classifications, "moderately severe" or "severe."[4, 5] For this reason, it was required that each patient (a) have a "bloody diarrhea" with blood, pus and mucus in the stools, (b) have an elevation of temperature of not less than 102 F., and (c) be admitted to observation before the end of the first week of the diarrhea. The majority of the patients were infants or young children. In three instances, it was either impossible to exclude the patient without upsetting the sequence of the series, or was desirable to include the patient because of the peculiarly significant features of the clinical picture presented. Such irregular inclusions were made to the group of those receiving the drug and tended to make the test more rigid rather than to relax it in favor of the drug. In no instance did they distort the significant aspects of the study.

ALTERNATE SELECTION

As previously stated, patients were selected alternately for the treatment group and for the control group, on the basis of the time they first were admitted to observation. Many others with bloody diarrhea had to be rejected because they failed to meet the rather rigid criteria set for selection. Generally this was because they presented a clinically too mild form of the disease or were seen after the first week of diarrhea at a time when one might expect that, at an early date, the natural recession of the clinical activity would follow. To include in the group to be treated, patients of the latter type, would obviously distort the validity of the conclusions. It is of interest to note that many of the patients who were not included in the study group were treated with the drug and the results were distinctly in keeping with those of the study group.

TREATMENT

The general treatment given the patients of both groups consisted of the usual supportive general measures with insistence on maintaining a good fluid balance and, when indicated, serum transfusions, whole blood transfusions, intravenous glucose, etc. Special attention was paid to the vitamin intake. Laxatives were not permitted. Opiates or phenobarbital, or a combination of opiates and phenobarbital were given for relief of tenesmus, pain and restlessness. Breast fed infants were permitted to continue on the breast. Whole cultured lactic acid milk was given to the majority of the patients. In general, very bland, high protein, low fat diets were employed while much of the carbohydrate was given in the form of glucose. In all but three instances, temperatures were taken by rectum. Cytologic examination of the blood was made at one time or another on roughly one-half of both groups. In several of the patients who received the chemical, blood level studies were made, the standard employed being the anhydrous sulfanilylguanidine supplied by Marshall. In infants and children as a rule 0.04 c.c. of blood was drawn, precipitated in a 1:200 dilution and the determination completed as described by Marshall.[1] Many follow-up studies of the urine and blood were made in an attempt to detect any injurious effects therein which might develop as a result of the treatment. It was not possible to attempt stool cultures in more than half the cases. Of the patients receiving the drug, one-third had stool cultures positive for the Flexner bacillus. A reliable diagnostic test, generally neglected by physicians in civil practice, was employed in many cases where stool cultures could not be made. In these, the purulent material of the stool was subjected to microscopic examina-

tion. In all such instances, the characteristic polymorphonuclear cells were found.

In the patients receiving sulfanilylguanidine, the procedure was very well standardized as to dosage, but there was an occasional irregularity in the time at which the drug was discontinued. These few irregularities did not distort the significant features of the study. The chemical was given in accordance with instructions proposed by Marshall.[6] The initial dosage was 0.1 gram per kilogram of body weight and the maintenance dose was 0.05 gram per kilogram of body weight every four hours until the stools were five or less per 24 hours, and thereafter 0.05 gram per kilogram every eight hours for 48 to 72 hours. The chemical was a fine white powder not very soluble in water, practically tasteless, and not at all unpleasant to take. It was given in a suspension of water or milk. One should be careful to see that it is well washed out of the receptacle in which it is administered. In many instances, it was given by oral gavage in a suspension of lactic acid milk or water. Surprisingly little difficulty was encountered in giving it, and as will be described later, it was singularly free from immediate or late toxic effects.

TREATMENT OF PATIENTS NOT RECEIVING DRUG

In the patients of the control series, who did not receive the drug, every benefit of modern pediatric treatment was provided, except that no sulfanilylguanidine, sulfathiazole, etc., was permitted during the first two weeks of observation, and no antidysenteric sera or vaccines were employed.

The patients included in both groups of the study presented a clinical picture which is encountered with significant frequency by the physicians of the area in which the study was conducted. All of the physicians participating in the study had previously had extensive experience with such cases. They were peculiarly well fitted, not only to supervise the general medical care of these patients, but to express trustworthy opinions as to the efficacy of the drug in this disease.

ON MEETING SOME OF THE PROBLEMS OF THE STUDY

In attempting to evaluate a therapeutic procedure in acute bacillary dysentery, one must be quite mindful of the vagaries of the clinical picture of the disease. These have been emphasized in a previous paper.[4]

If one takes the presence or absence of fever as the index of activity of the infection, one cannot be certain of the exact time of onset, because frequently temperatures are not taken until the physician is consulted. Once the patient is under observation, the temperature may, with certain reservations, be taken as one index of the activity of the infection. This has its practical limitations, in that most patients continue to suffer from their bloody or purulent diarrhea for some time after the fever subsides, frequently, indeed, for as long as two weeks or more after the temperature has returned to an essentially normal level.

For purposes of objective comparisons, one obtains from the clinical history a more reliable "onset" if one takes the appearance of the first loose stools as the time of onset. In most instances this will be the first day of illness, but it is not at all infrequent for vomiting and fever or even convulsions to precede the diarrheal stools by 24 to 72 hours.

Onset of illness in this study is considered as onset of diarrhea, although in each case data has been sought for, and recorded in so far as possible, as to probable onset of fever and other evidences of illness such as convulsions, chills, vomiting, etc.

In determining the course of the clinical activity and its recession, three objective manifestations of the disease have been considered, none of which is by itself a completely satisfactory yardstick. One almost never observed the clear cut endpoint in the matter of the cessation of diarrheal stools in the control group that one observed almost regularly in the patients successfully treated with the drug. In the control group, the change from abnormal stool to normal stool was nearly a three to four day affair, just as it has usually

been observed in other patients in the past in this disease.

The temperature curve has been observed and when it has remained below 38° C. (100.4° F.) when taken by rectum, the temperature has been recorded as normal, and days of fever have been charted on the basis of whether the temperature of a patient did, or did not exceed this level.

The number of stools in 24 hours has also been considered as a possible index of the clinical activity. When stools have been four or less in 24 hours, this has been noted and comparisons have been made on the basis of the number of days required for the stools to return to this arbitrary frequency.

"DIARRHEA CHECKED"

Neither the temperature curve nor the number of stools in 24 hours can be expected to tell the whole story, so a term similar to that employed by the workers in the Harriet Lane Home has been used. By the use of the expression "diarrhea checked" it is meant that the stools were pasty or formed and contained no gross blood or pus and had little, if any, mucus. Generally it meant as well that there were not more than four such stools in 24 hours. Obviously, such a stool is a relatively normal stool. In the patients of the control series, changes in the stools took place in the manner we were accustomed to see them occur in the past. It is a matter of common observation that during the stage when the stools are just beginning to return to normal, there may be one relatively normal stool in the morning with no blood or pus, and subsequently in the day, one or more small ones be passed which contain pus or perhaps a little blood. The transition from abnormal to normal, may therefore extend over as much as three to seven days or more, and yet the clinical progress of the patient be distinctly satisfactory with perhaps some ambulatory activity even being permitted.

As the study progressed, it was found that for comparative purposes the onset of the disease could quite satisfactorily be taken as the date of onset of the diarrhea. Fortunately, in the majority of the patients who received the drug, in marked contrast to those of the control group, the fall in temperature was generally accompanied by, or within 24 to 48 hours followed by, a change in the number and the character of the stools. In almost every instance in which therapeutic benefit was observed, the rather intangible and not at all readily measured general clinical trend of the patient presented a most definitely significant observation, and one which in the end is quite as convincing as the apparently better measured indexes, the "diarrheal stool" or freedom from fever.

CONDUCT OF STUDY

Patients receiving the drug were treated within 24 hours after admission.

Records were kept as to the temperature curve, the changes in frequency and character of the stools and the changes in the general clinical trend. The drug was administered so as to provide a dosage of 0.1 gram per kilogram of body weight for the initial dose and 0.05 gram per kilogram every four hours for the maintenance dose. When the stools became less than five in 24 hours, 0.05 gram per kilogram was given every eight hours for 48 to 72 hours thereafter. The chemical was given suspended in water or milk. In a few instances, the drug was given for a longer period, largely as an experimental affair, although to some degree because of fear of a relapse. Later it was found that this was, in fact, a rare occurrence, and the original plan for discontinuing the drug was adhered to. In some instances which were beyond control, the drug was omitted before the desired time. When this was done it did not seem to affect the end results, except in the patients to whom more detailed reference will be made in the resumé of case reports (No. 17, No. 27).

GENERAL OBSERVATIONS

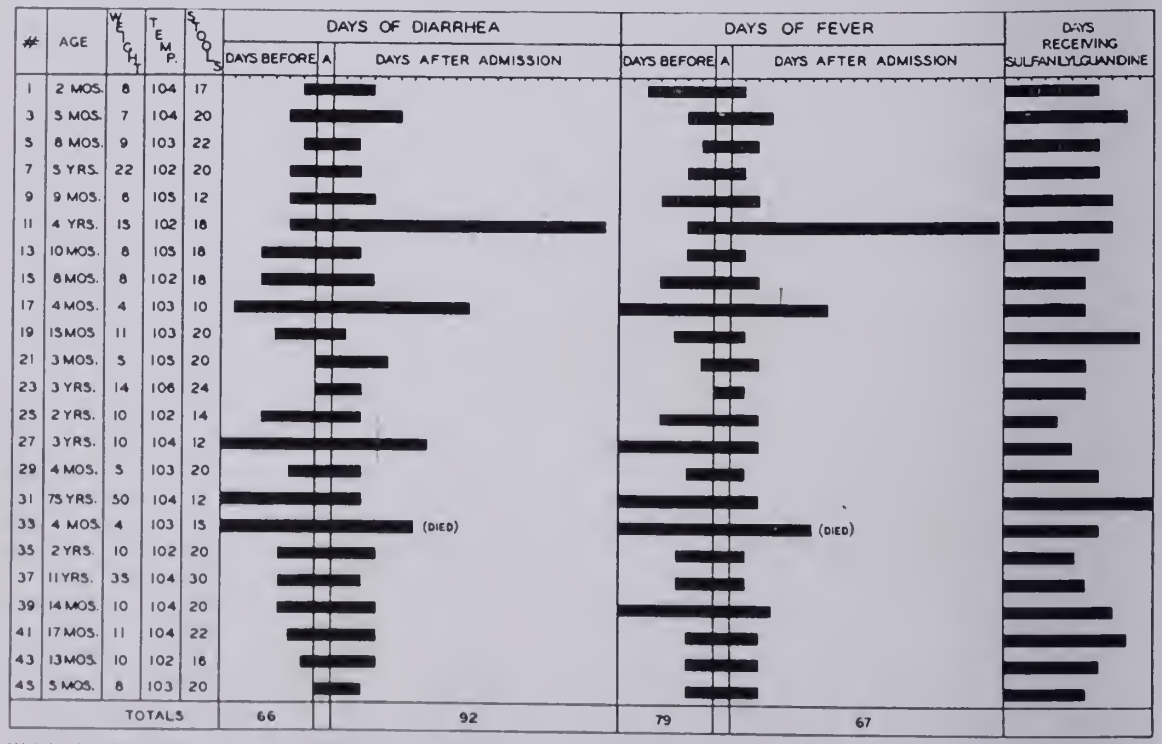
The accompanying graphic presentation (Charts I and II) affords some indication of the differences in duration of diarrhea and fever after treatment was begun as compared with the same characteristics in those not re-

ceiving the drug. The most outstanding feature, however, cannot be so shown. This is the almost unbelievable improvement in the clinical picture of the patient which so frequently was observed within 24 to 48 hours after the administration of the drug. While this was not a matter of universal occurrence, the fact that it occurred so dramatically in the majority of patients so treated remains a most significant fact. Its effect can truly be compared to that of sulfanilamide in infections due to some streptococci and to that of sulfapyridine and sulfathiazole in pneumonia due to pneumococci.

In many instances, the result was comparable to that which takes place when one has employed specific antitoxin in some of the other infections. This dramatic decrease in the intensity of the toxic manifestations of the disease, the striking improvement in the clinical condition of most of the patients, and the rapidity with which this took place was truly remarkable. This can be fully appreciated only by those accustomed to observing cases of bacillary dysentery of such a degree of severity as that which characterized this group of patients. The tendency for the diarrhea and the indigestion of these patients to drag out over two, three or more weeks, under any form of treatment previously at our disposal, is well known to all who have had experience therewith.

In order to have the usage of terms of this study conform to that of the Harriet Lane group,[2] the diarrhea was considered to be "checked" when the stools were four or less in number daily, were pasty or formed and were without gross blood or pus. In the patients receiving this drug, the transition from abnormal to normal stools was generally rapid and the endpoint clear cut so that this is indicated with accuracy (Chart I). In the patients not receiving sulfanilylguanidine, the transition was not so quickly accomplished, and the endpoint not so clear cut. In the majority of these, the stools continued

CHART I—DYSENTERY PATIENTS RECEIVING SULFANILYLGUANIDINE



Weight in Kilograms Temperature in Degrees F. Stools—Number per 24 Hours On Day of Admission (A)
"Days of diarrhea" indicates days stools were loose and contained gross blood or pus. "Days of fever" indicates days when rectal temperature exceeded 38° C. (100.4 F.) at some time during the day. Treatment with sulfanilylguanidine instituted on day of admission (A).

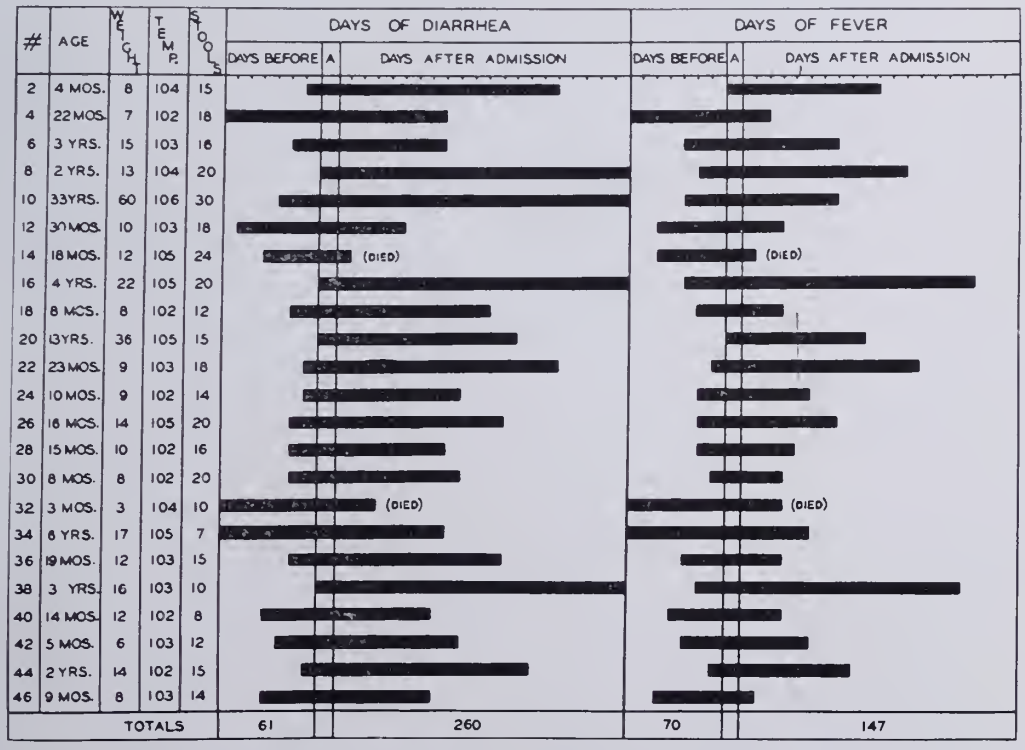
to be occasionally softer than desirable, to contain occasionally some mucus, or at times even a little blood or pus. The graphic description, therefore, errs in that cessation of diarrhea was not complete in all the patients at the times indicated (Chart II). This is not of significance, however, when such characteristics of the two groups are compared. The difference between the two groups would have been even more marked had it been necessary to chart all such additional occasional abnormal stools in those not receiving the drug.

The tendency for the temperature to return to normal more quickly in those receiving the drug is also graphically indicated (Charts I and II). Where temperatures are shown for day of admission, this refers to the maximum temperature recorded for that day. The same practice obtains in the case reports.

In those instances where the blood counts were studied and where a leucocytosis was observed, the leucocyte count tended to return to a more normal level within 24 to 48 hours after beginning the treatment with the drug. Because of subsequent follow-up studies along this line it seemed certain that this was probably not due to a specific aggressive effect of the drug on the leucocytic cells. No agranulocytic phenomena definitely attributable thereto were observed, although such was for a time suspected in one instance (No. 11), and as may possibly actually have occurred in another (No. 22). Both cases are reviewed in the resumés of the case reports. Such influences were sought for in just as many patients as possible, since there was apprehension lest it might occur with the use of this new drug. It certainly did not occur in the dysentery patients who were free from other infections of importance.

Of the 23 patients so treated, only three evidenced some tendency to nausea and vomiting, believed to be, but not certainly known to be, due to the drug, (Nos. 11, 25 and 33). Such symptoms were as common in the

CHART II—DYSENTERY PATIENTS NOT RECEIVING SULFANILYLGUANIDINE



Weight in Kilograms Temperature in Degrees F. Stools—Number per 24 Hours On Day of Admission (A) "Days of diarrhea" indicates days stools were loose and contained gross blood or pus. "Days of fever" indicates days when rectal temperature exceeded 38° C. (100.4 F.) at some time during the day.

control group as in those treated. In one instance, there may have been some disturbance of the sensorium and some agitation (No. 25). In one instance, there may have been some conjunctival injection (No. 37). In two instances (Nos. 11 and 13) it was felt there may have been some discoloration of the skin such as is seen so frequently in treatment with sulfanilamide, although this was not remarkable. In two instances, (No. 11, No. 22) as will be described under the resumé of case reports, a hemolytic anemia may have been aggravated by the drug, but could quite as well have been caused primarily by an associated pyogenic infection.

In eight of the infants so treated, the stools were black and much like meconium (No. 29, etc.), for the first two or three days they received the drug. The meaning of this, if any, is not known. In general it may be said that toxic effects, immediate or late, were much less severe and were seen with much less frequency than would have been expected with either sulfanilamide, sulfapyridine or sulfathiazole. No tendency to acidosis or renal irritation was observed.

TABLE I

Influence of Early Administration on Effectiveness of Drug.

Days of diarrhea before patient received drug	0	1	2	3	4	5	6	7
Successful	3	3	4	4	3	0	0	1
No influence	0	0	2	0	0	0	1	2

TABLE II

Distribution of Patients as to Age Levels

	Under 2 yrs.	2 to 6 yrs.	11 yrs.	13 yrs.	33 yrs.	75 yrs.
Patients receiving drug	15	6	1	—	—	1
Patients not receiving drug	13	8	—	1	1	—

When determinations were made of the amount of sulfanilylguanidine in the blood, they were found rather generally to vary between 1.5 and 3.6 mg. per cent. The highest observed was 5.2 mg. per cent. (No. 22).

CASE REPORTS (A)—Patients Who Received No Benefit From Sulfanilylguanidine

H. E., (No. 11, age four years, 15 kg.) on October 3 was admitted to the service of Dr. F. A. Scott and Dr. T. G. Folsom, St. Mary's Hospital, for an operation for an old osteomyelitis of the tibia. Four months previously this patient had been admitted to the hospital to receive treatment for this same disability and during that stay had received at one time or another both sulfanilamide and sulfathiazole. On the first day of his second admission, it was found that he had a bloody diarrhea. Treatment was begun at once so that he received sulfanilylguanidine two days after the onset of his bloody diarrhea. He was not very ill. In fact, much of his illness was probably due to his osteomyelitis, rather than to his bacillary dysentery. Besides this, he had a significant ascariasis which was not given therapeutic attention at this time. He received the drug over a period of eight days (October 3-10) and was apparently not benefited by it, as his fever and purulent, bloody diarrhea continued. Note blood findings thereafter.

October 3	RBC 5,140,000	Hb. 78%	WBC 13,700
October 11	RBC 4,240,000	Hb. 70%	WBC
October 16	RBC 2,780,000	Hb. 37%	WBC 53,000
October 18	RBC 3,180,000	Hb. 62%	WBC 31,000
October 24	RBC 3,260,000	Hb. 66%	WBC 12,400
October 30	RBC 3,210,000	Hb. 66%	WBC 18,800

While the diarrhea persisted, it was not as severe as is usually encountered in a case of such apparent gravity. Several blood transfusions (October 11-16) improved his blood picture somewhat and the subsequent, but more or less accidental, administration of sulfathiazole three weeks later was followed by an immediate cessation of his bloody and purulent diarrheal stools. This was not accompanied by any depression of either erythrocytes, hemoglobin or leucocytes. He continues to have a clinically unsatisfactory course probably due to his osteomyelitis. Except for three weeks recently, he has been febrile (100.4 to 102°) pretty much of the time the past three months, that is, since the onset of the dysentery infection, although this has long since ceased to be a part of his clinical picture. At various times throughout his clinical course he has had red blood cells, casts and albumin in his urine. This was not apparently related to his chemotherapy. It is likely that he should not have been admitted to this group for study, because of his complicating osteomyelitic infection. It was the impression of Dr. Folsom that his hemolytic anemia was at least aggravated by, if indeed, not induced

by his chemotherapy. There are too many disconcerting factors to make this seem a certainty. No agranulocytosis occurred.

E. B., (No. 17, four months, 4 kg.) on October 8 was admitted to the service of Dr. J. Basman, Charleston General Hospital, Charleston, West Virginia, with a history of fever and bloody diarrhea of six or seven days duration. Sulfanilylguanidine was first given on the seventh day of diarrhea. Although the drug was given in the prescribed manner, the patient continued to have a temperature of 102 to 103 for a week, and it was 10 days or so before the stools were greatly improved. Dr. Basman stated that he noted no change following the use of the drug as the expected course of the disease was run. This was an unquestioned failure, but treatment was begun at the end of the first week, a fact which may have some significance.

L. A., (No. 27, three years, 10 kg.) on October 21 was admitted to the service of Dr. J. Basman, Charleston General Hospital, Charleston, West Virginia. There had been fever and bloody diarrhea for 10 days. Sulfanilylguanidine first administered on the tenth day of the diarrhea, at just about the time one might expect a natural recession of the disease to occur. The drug was administered for a period of four days only, during which time the natural improvement apparently took place. Dr. Basman said, "I do not believe it was a fair trial, but I saw no improvement in the bowel movement after the drug was given." It was unfortunate that this case had to be included, but it was necessary to do so or upset the sequence of the series. It was planned to accept only patients who had had their diarrhea for less than one week, and this patient had diarrhea for 10 days prior thereto.

H. R., (No. 33, four months, four kg.) on November 4 was admitted to the service of Dr. Lyon, St. Mary's Hospital with a bloody and purulent diarrhea of seven days duration. The patient was extremely emaciated and was said to have done poorly from birth. He was admitted in a critical condition. Chemotherapy was begun promptly on admission. He received no benefit from the drug so far as the purulent diarrhea was concerned, and developed a pneumococcic meningitis from which he died on the sixth day after admission. Again, this was not a desirable type of patient to have included in such a series, and while admittedly the drug was not observed to be effective, bacillary dysentery occurring in a poorly nourished infant of four months was attended by a severe and fatal complication outside the gastrointestinal tract. Stool cultures were not obtained. The microscopic examination of the purulent material from the stool was highly significant and rendered a diagnosis of bacillary dysentery reasonably certain.

E. S., (No. 3, five and one-half months, seven kg.) on September 26 was admitted to the service of Dr. Lyon, Memorial Hospital, with a history of fever and bloody diarrhea, which had appeared two days before. Following admission and the administration of the drug the fever persisted for three days and the diarrhea for five days. As the parents insisted on removing the baby to the home on the same day it was admitted to the hospital, and since they were not entirely dependable as to care and medications, the thoroughness of the administration of the drug is not known. Two doses a day were, however, regularly given by a visiting nurse, for a period of nine days. In this instance, the drug had no dramatic effect, and indeed may have had no effect. Because of this uncertainty and because it was one of the five of the 23 patients treated with the drug who continued to have a diarrhea for more than three days after beginning treatment with the drug, the result of this treatment is entered as a failure. On the other hand, one cannot be certain that it was entirely without effect for the stools were normal on the sixth day after treatment with the drug was begun.

CASE REPORTS (B)—Some Patients Who Benefitted From Sulfanilylguanidine

Of those who received remarkable benefit from the drug, several merit description, and the first may be taken as typical of the majority of the group to so respond.

C. H., (No. 35, two years, 10 kg.) on November 11 was admitted to the service of Dr. T. Folsom with a complaint of vomiting, fever and bloody diarrhea for three days. His temperature was 102° and he had 20 or more loose stools containing blood and pus during the day preceding. He was first given sulfanilylguanidine on the day of admission. There was a remarkable improvement in his general clinical condition and his temperature returned to normal within 24 hours. His stools were normal after 72 hours. The stools were free from blood after the first 24 hours. There was a rapid de-

crease in the number of stools per day and a great improvement in the character of the stools within 24 hours after chemotherapy was begun. Dr. Folsom said, "He was essentially well in three days. The result was dramatic. His convalescence was very rapid." He received the drug for only five days. The stools were not cultured. Special blood studies were not made.

A. R., (No. 1, two and one-half months, 6 kg., breast fed) on September 21 was admitted to the service of Dr. Lyon, Memorial Hospital. Because of distention and vomiting, the infant was suspected of having intussusception or intestinal obstruction, and for this reason was referred to the hospital. Curiously enough, illness had been initiated with a convulsion. The temperature was 103 to 105° during the first five days in the hospital. At the end of this time, loose bloody stools were passed (September 25). The following day, (September 26), 17 bloody stools were passed and the maximum temperature was 104°. Sulfanilylguanidine suspended in 10 per cent glucose solution was then and thereafter giving by gavage. Although the infant had been unable to nurse vigorously it was possible to give the milk expressed from the mother by gavage. The infant was critically ill. Dehydration was combated mainly by frequent oral gavage of 10 per cent glucose in physiologic saline solution. This was well retained. Within 24 hours after the drug was first given, the temperature fell to a nearly normal level, and there was a similarly dramatic improvement in the general clinical condition. After 72 hours of chemotherapy, the stools were normal breast milk stools. The Flexner bacillus was recovered from the stools passed on the day the drug was first given. September 25, WBC, 17,000; September 28, WBC, 11,000; October 2, WBC 9,000. The drug was given for a period of seven days. This rapid recovery is remarkable because of the age of the patient, and the severity of the infection.

M. Z., (No. 29, four months, 5 kg.) on October 25, was admitted to the service of Dr. W. Parsons, Huntington Baby Clinic. There had been a bloody diarrhea and fever for two days. On the day of admission, the baby had a temperature of 103°, was quite ill, and had passed 20 or more bloody stools during the previous 24 hours. Parents were intelligent and cooperative. Miss Sprouse, the visiting nurse from the clinic, closely supervised the treatments. The drug was given at times by oral gavage and at times just suspended in the whole cultured lactic acid milk and given from the bottle. Within 24 to 48 hours, a most striking improvement occurred. The temperature had returned to normal in 24 hours. The stools were normal and pasty after the first 48 hours of chemotherapy. The drug was administered for seven days, in accordance with the general plan. The visiting nurse who has had more than 12 years experience with such patients said, "I have never seen anything like it. She was well by the third day." Two weeks after beginning chemotherapy her blood examination was normal. She was watched particularly carefully because on the first two days she received the drug, her stools were very similar to meconium. Reference as to this having occurred in several of the infants so treated, has been made.

D. B., (No. 23, three years, 14 kg.) on October 10, was brought to the office of Dr. Lyon having just had a convulsion. Prior to this he had been quite well. His temperature was 106.5°, and he passed his first loose stool, which contained blood, while in the office. During the next 24 hours, he had on an average of one or more such stools every hour. They were mostly blood and contained little fecal matter and little pus. He continued to be quite ill and to be quite prostrated. On the second day of chemotherapy, his temperature had returned to normal and he had his last diarrheal stools within 48 hours of his first dose of sulfanilylguanidine. His general clinical improvement was one of the most dramatic of the entire series. On the sixth day of treatment which was the sixth day after onset of his diarrhea, he was a well boy and on a normal diet and having normal physical activity. Day of onset, (October 10) RBC 4,100,000, WBC 7,800. Two weeks later, (October 24) his condition continued to be entirely normal, and a recheck of his blood for purpose of our study revealed RBC 3,900,000, hb. 69 per cent (Sahli), and WBC count 14,000. The differential smear was not remarkable. His stools were never cultured. That he had little or no pus in his bloody stools is a noteworthy fact. The clinical course was rapidly terminated.

O. W., (No. 31, age 75 years, 50 kg.) on November 1, was admitted to the medical service of Dr. C. E. Richards, Holzer Hospital, Gallipolis, Ohio. He had had a severe bloody diarrhea with

vomiting, chills and fever for 10 to 12 days previous to admission. The Flexner bacillus was recovered from his stools. He was severely dehydrated and gravely ill. Besides his chemotherapy, he was given intravenous glucose and saline solution. His abdominal cramps were severe. He had 12 stools with blood, pus and mucus the first 24 hours of admission, and his maximum temperature that day was 104 . Proctoscopic examination revealed the characteristic findings. He was given a typhoid diet. Through an error, after an initial dose of 6.0 grams of sulfanilylguanidine, he received for the next two days only three grains every four hours instead of 3.0 grams which he was supposed to receive, and which he did receive every four hours after this time. That he received a remarkable benefit from his initial dose, and perhaps even some from the small amount he received thereafter for two days, is evidenced by the fact that his stools dropped from 12 per day to four per day within 24 hours, and although they did contain a little blood and pus for a second 24 hour period, the improvement was remarkably rapid and they were essentially normal the following day. His temperature was normal after 48 hours of medication. He was remarkably less toxic after only 24 hours of drug treatment. His general clinical picture showed an equally striking improvement in the first 48 hours, and he became very anxious for food. He received the drug for 11 days. The blood concentration varied from 1.5 mg. per cent to 2.2 mg. per cent, the latter on the fourth day of treatment. On discharge, his blood examination revealed RBC 4,000,000, hb. 76 per cent, WBC 6,600, (neutrophiles 52 per cent, lymphocytes 32 per cent and monocytes 16 per cent). He showed no urinary abnormalities. His blood non-protein nitrogen was 35, blood sugar 100 and chlorides 480. His Widal and Wassermann were both negative. He had a rapid uneventful recovery and has had no recurrence of his trouble since discharge. This case is of importance because it demonstrated that even at relatively late stages in the disease, sulfanilylguanidine may, at times, effect quite as dramatic results as when used earlier. The age of the patient as well as the severity of his infection, likewise adds to the interest of the case.

CASE REPORTS (C)—Patients Not Receiving Sulfanilylguanidine

Of the patients in the control series, and who did not receive the drug, the clinical course of three should be described; the first, F. R. (No. 6), because the infection and the clinical course was the least severe and of shortest duration of any of the group, the second, J. K. (No. 16) because her's was one of the most severe of those to survive, and the third, J. W. (No. 44) because his clinical course typified that of the average severity and duration for the group. There were two deaths in this group (No. 14, No. 32).

F. R., (No. 6, three years, 15 kg.) on September 15, was admitted to the service of Dr. Parsons, St. Mary's Hospital, with a history of having had fever for three days and bloody diarrhea for two days. On the day of admission, there were 16 bloody stools with little pus and the maximum temperature was 103 . The patient had fever for seven days after admission, and dysenteric stools with blood and pus, or pus for at least eight days after admission. Her febrile course was 101 to 103 during her period in the hospital. There was from the beginning a disinclination to take food or fluids, and during the second week after the onset, she had a slow but steady return to normal stools and a return to a more normal general condition. Convalescence was hardly completed by the end of the third week. The Flexner bacillus was recovered from the stools. Three patients (Nos. 12, 28, and 30) presented cases of significantly more severity. The remainder of the control group were of a much greater severity and of longer duration.

J. K., (No. 16, four years, 22 kg.) on October 7, was admitted to the service of Dr. Lyon. She had fever for three days prior to this but this had become gradually worse until it reached 105° on this day and shortly thereafter she began passing loose bloody almost hemorrhagic stools. At this time she was very hyperesthetic and vomited several times. Throughout the following week she was quite ill. The stools were more than 18 to 20 daily and contained no pus until the third or fourth day of diarrhea. Tenesmus was intense and required much opiates. There were occasional chills. Persistent, attentive nursing obviated the necessity of gavage or intravenous fluids. A splendid fluid intake was maintained. The diet was limited to cultured lactic acid milk, and cottage cheese during the active stage. She was not afebrile until 18 days after admission and the stools contained pus and mucus with occasional blood throughout the third week. Prolapsus ani was severe and persistent.

At the end of the third week while much better, and the convalescence beginning, she was still very weak, had lost much weight and a good month was required thereafter before she had returned to a relatively good physical condition. Leucocytic forms were observed in the purulent flecks from the stools. The Flexner bacillus was recovered from the stools. Blood counts October 4, WBC 12,000; October 7, WBC, 20,000; October 10, 22,000; October 17, 18,000. Her case was one of the severe form.

A case of somewhat above average severity for the group, was that of J. W., (No. 44, two years, 14 kg.) On November 22, he was admitted to the service of Dr. W. B. Hunter. Onset was sudden with fever, vomiting, and diarrhea, 24 hours before admission, at which time the temperature was 103.4°. There had been 13 bloody stools the 24 hours previous. The patient was quite actively ill during the first week. There continued to be fever of 101 to 103° for eight days after admission. The stools were loose and contained blood and pus, or pus, for 14 days after admission. There was the usual anorexia, tendency to nausea, loss of strength and ennui. There were from time to time thereafter occasional stools which were not quite normal, and there was the usual intestinal sensitivity to too much food and to harsh foods. Convalescence was rather well advanced by the end of the third week.

D. W., (No. 14, 18 months, 12 kg.) was seen by Dr. Lyon in consultation at the patient's home in rural Ohio on October 4. There had been fever and bloody diarrhea for five days. The temperature was 105° and the stools were passed almost constantly. The dehydration was severe and the condition genuinely critical. Hospitalization was refused. The clinical picture grew steadily worse. Death occurred late the following day.

R. C., (No. 32, three months, three kg.) was first examined by Dr. Lyon on November 1. The complaint was fever, vomiting and diarrhea in an infant which had never done well from birth. The temperature was 104°, the stools had been loose and with blood in them for seven days. The infant was in a critical condition and in spite of the usual measures of glucose solution, serum transfusion, etc., death occurred three days later.

CASE REPORTS (D)—Patients Who May or May Not Have Shown Some Important Toxic Effects.

Hemolytic Anemia (?)

The description of Dr. Folsom's patient, H. E., (No. 11) has been given among those of the patient who failed to benefit from the drug.

Agranulocytosis (?)

L. H., (No. 22, 23 months, 9 kg.) was a patient of Dr. Richards of the Holzer Hospital, Gallipolis, Ohio, and was admitted on October 10, as a member of the control group. She was permitted to have the drug after 14 days of observing her bloody diarrhea and fever. There was a lesion of the left nostril which involved the nasal septum and the lip, and it was at first feared this might be noma. The stools were positive for the Flexner bacillus. October 26, the day following beginning of chemotherapy, RBC 3,440,000, Hb. 58 per cent, WBC 3,800, (neutrophiles 28 per cent, lymphocytes 56 per cent, monocytes 12 per cent and myelocytes 4 per cent). Two days later (October 28) the blood sulfanilylguanidine after having been on standard dosage for three days, was 5.2 mg. per cent. Blood examination at that time revealed, RBC 2,840,000, Hb. 52 per cent, WBC 4,200 (neutrophiles 20 per cent, lymphocytes 80 per cent). On October 31, after seven days of treatment, the drug was discontinued. At this time examination of the blood revealed RBC 2,720,000, Hb. 47 per cent, WBC 10,800, (neutrophiles 36 per cent, lymphocytes 58 per cent and monocytes 6 per cent). The chemotherapy was followed by a rapid improvement in her general condition. Within 48 hours she was much less toxic. In 48 hours, the diarrheal stools had dropped from 12 to 5 and their character improved with equal rapidity. From this time, she made an uneventful recovery and has remained entirely well since. The lesion on the lip had disappeared completely by the time of discharge from the hospital. The rapidity with which the blood changes occurred suggest that this may have been a part of her original disease (dysentery or infection of lip). This appears more likely. One notes the drop in the blood from that of October 21, four days before the drug was given (RBC 4,400,000, Hb. 76 per cent, WBC 43,000, PMN 75 per cent, lymphocytes 22 per cent, monocytes 3 per cent) to that reported above for October 26, less than 24 hours after beginning chemotherapy. It is unlikely that the action of the drug was responsible for these changes in her blood. Whether the drug was an aggravating factor cannot be said.

SUMMARY

Twenty-three patients with severe, or relatively severe, cases of acute bacillary dysentery were treated with sulfanilylguanidine, and twenty-three patients with the same disease and with cases of a similar severity were taken as untreated controls. Alternate patients were treated.

In order that the cases be as similar in clinical character and in severity as possible, rather rigid criteria were established as a prerequisite for selection. Because of the wide variations in the clinical manifestations of this disease, it is essential that the cases be as nearly similar in their nature as possible, if reliable conclusions are to be obtained. The importance of this was emphasized.

Of the patients not receiving sulfanilylguanidine, the clinical course with which we are so familiar generally occurred. Temperatures of 102 to 105° were observed during the first week with severe bloody diarrhea, nausea, vomiting, abdominal cramps, tenesmus, prolapsus ani; in the second week, a lower temperature, a continuation of the diarrhea which became more purulent than bloody and a loss of strength and body weight; in the third week, a tendency to enter a convalescence of varying degrees of severity and tardiness, accompanied by indigestion and loss of strength.

Of the patients receiving sulfanilylguanidine five seemed to follow a clinical course not influenced by the drug. Of these, two had accompanying pyogenic infections which were very important. Of the other 18 patients treated with the drug it may be said that they all received marked benefit from the drug. Many of these were, indeed, most dramatic in character. In these patients to be so benefited, there was generally, within 24 to 48 hours, a rather rapid fall in the temperature and in the leucocyte count, a closely paralleling general clinical improvement, a marked reduction in the number of diarrheal stools, and an equally remarkable improvement in the character thereof as to consistency and to the absence of blood, pus, or mucus. This occurred in the first 24 to 72 hours after institution of the chemotherapy in all of the 18 patients being described. In the control group in only one instance was the "diarrhea checked" before the sixth day after admission and in only two more did this occur before the eighth day after admission. In four the stools continued to be abnormal in the fourth week after admission.

There is reason to believe that sulfanilylguanidine is most efficacious in the first three or four days after onset of fever or diarrhea and that the percentage of failures may be higher when given later in the illness.

Observations at hand lead to the assumption that sulfanilylguanidine is an effective agent for the treatment of acute bacillary dysentery. While in the dosages recommended it appears to be a safe therapeutic agent, it should be used with conservatism and conclusions drawn guardedly. Toxic effects may have been observed, but only in those patients with concomitant infections outside the intestinal tract and not, indeed, with certainty then. Its use is attended with less toxic side effects than that of the related compounds. Its final place in the field of chemotherapy can be established only by appropriate clinical use and study.

CONCLUSIONS

1. Sulfanilylguanidine is effective in the treatment of acute bacillary dysentery or "bloody flux."

2. It appears to be most effective if administered within the first three or four days of the diarrheal state.

3. Toxic manifestations, whether immediate or remote, appeared to be much less frequent and of much less significance than those encountered in the use of either sulfanilamide, sulfapyridine or sulfathiazole.

Gratitude is expressed particularly to the following physicians without whose aid this study would not have been carried on: Drs. T. Folsom, W. Parsons and W. B. Hunter of Huntington, West Virginia; Drs. Harry Baldock and Jack Basman of Charleston, West Virginia; Dr. C. E. Richards of Gallipolis, Ohio; Dr. Mackey of Chesapeake, Ohio; Dr. Dillon of Proctorville, Ohio; Dr. George Walden of West Hamlin, West Virginia, and Dr. W. Brewer of Logan, West Virginia.

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ROENTGEN EXAMINATION OF THE COLON*

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In this discussion we are not primarily concerned with methods, nor with findings, but with an evaluation of this method of examination as it fits into the complete group of diagnostic data. As actual visualization of the colon is limited to a small part of the distal end and palpation must yield but meager information, we must of necessity rely largely on x-ray examination for evidences of structural changes. Improvements in technical procedure together with more accurate interpretation of the findings have caused this method of examination to reach a very high degree of accuracy. Few examinations in the field of radiology require more in the way of experience, judgment and attention to detail; few yield more satisfactory results if the requirements are met.

We shall select only a few of the many pathological lesions of the colon in which röentgen ray examination is helpful. First, let us consider the so-called "spastic colon." Many of these cases a number of years ago were given the diagnosis of "spastic colitis", "mucous colitis", and the like, and, although they give rather definite and often spectacular röentgen findings, are no longer correctly considered under the head of colitis. They are not true inflammatory lesions of the colon as those names would imply, but are the reactions of this particular part of the intestinal tract to some general disability, whether functional or organic. These findings are frequently associated with other definite symptoms of neurosis. If we made an estimate of the incidence of this condition among those who come up for examination we would find it high, very high among the neurotic, among women who for long periods have been constipated and taken cathartics in excess, very high in any group poorly adjusted to their environment. The chief reasons for including this condition in such a discussion as this are: First, to call attention to the error of indicating by röentgen report findings that would suggest an organic lesion of the colon when no such lesion exists; second, the grave danger of overlooking a serious organic lesion in our enthusiasm to report this finding which is only a symptom. It is a symptom which calls for an investigation as to its cause. It may be secondary to an organic lesion either of the colon or elsewhere, or it may be impossible to find any organic lesion responsible, in which case a neurological basis must be sought.

*Read before the Association of Surgeons of the Chesapeake and Ohio Railway, White Sulphur Springs, West Virginia, November 8, 1940

The röentgen findings in an unstable colon include: A rapid upward passage of the column of barium when given by enema; a decrease in the caliber of the colon, usually most marked in the left, with often dilatation on the right, and changes in haustrations, these often being diminished, effaced or even exaggerated. There is considerable variation in degree of these findings. A section of the colon may be narrowed to pencil size, giving the so-called "string sign."

Our next classification will be considered under the general head of colitis; cases where a true inflammatory condition of the colon exists. The findings in this condition will depend upon the stage which the disease has reached when the examination is made. All of the findings noted in the unstable colon, that is spastic areas, changes in haustrations, narrowing and the like, may be present in a true inflammatory lesion. In fact, it may be impossible to distinguish definitely between an unstable colon and a true colitis in the early stages. Where it is possible to obtain information in regard to the condition of the mucosa the differential diagnosis is much more definite. The longitudinal folds tend to disappear while the transverse become more prominent. There may also be other evidences of a swollen mucosa.

ULCERATIVE STAGE

Cases which reach the ulcerative stage show more definite findings. At times low fine indentations and other characteristic findings of ulceration may be noted. Walls are thickened and become more rigid. Haustrations tend to become obliterated. Using the double contrast method of examination röentgenograms frequently show a fine moth-eaten appearance. Still later stages may show a markedly shortened, smooth, rigid "gas pipe" colon.

Two lesions of the colon in which the primary etiological factor is a specific organism should be considered. These are lesions due to the tubercle bacillus and to the ameba.

The incidence of gastrointestinal tuberculosis among patients suffering from the pulmonary form of this disease is surprisingly high. The region of the cecum and the terminal ileum is the most common site for tuberculosis. Röentgen findings include irritability or deformity of this section. The involved area tends to empty itself rapidly. An examination made after giving barium by mouth will frequently show this section empty or partly empty with sections, both proximal and distal, well filled. Any failure to visualize the cecum and adjacent ascending colon during a gastrointestinal examination calls for the consideration of tuberculosis as a possible cause.

AMEBIC INFECTION

In only a limited group of cases of amebic infection is röentgen examination of value. Pathological changes may be so slight that nothing of significance is found. The disease may be so violent that this examination is contraindicated. In subacute cases or cases under treatment this type of examination may be of value in determining the extent of the lesion and in following the progress of a case responding to specific therapy.

Although lesions due to ameba may give no characteristic röentgen findings the condition should be considered when evidence of ulcerative colitis is found. In a typical case the colitis will be localized in a number of areas with apparently healthy portions between. Again, the most frequently affected section is that in the region of the cecum and ascending colon, but this time the terminal ileum is normal.

Colitis due to other organisms will not be discussed except to call attention to the fact that the first evidence of a streptococcic colitis is usually seen in the distal colon.

As more attention is given to röentgen ray examination of the colon a larger number of cases of polyposis are reported. Undoubtedly inflammatory hyperplasia is an underlying etiological factor in the development of a large number of these cases. Familial predisposition is also a factor in this condition. Polypi show a very definite tendency to be-

come malignant. We recently found evidence of polyposis of the colon in a patient, whose family history bears out both of the above statements. Complete data has not yet been gathered, but 12 cases of polyposis have been located in the family. Nine of these have died, and evidently from the records obtained, malignant changes had developed in a number of them.

The röentgen findings include those to be expected in a rather long standing ulcerative colitis, irritability changes in haustration and the like. By using the double contrast method more definite evidence of the polypi themselves can be brought out. Typical findings in a well developed case of polyposis will include small rounded areas of diminished density giving a more or less moth-eaten appearance.

Fig. 1: This case shows a large, smooth, oval filling defect in the cecum with the rest of the colon normal in appearance. A diagnosis of benign tumor of the cecum was made and confirmed by operation.

Diverticulosis is another lesion of the colon frequently encountered. The incidence is especially high in overweight patients past middle life. They are frequently present when evidently not an important factor in the case. It is not unusual to find scattered diverticuli in a case coming up for examination for symptoms due to a lesion not in any way associated with the diverticula. Typical x-ray findings in a case of diverticulosis are rather definite. Small lesions without a fecalith cast a bud-like shadow projecting beyond the lumen and show up clearly if their position is advantageous. If a fecalith is present, a ring-like shadow may be found. Films taken after evacuation are important in bringing out evidence of diverticula. The barium may remain in the lesions for long periods after the barium enema has been

Fig. 2: This shows the tumor, removed at operation, which proved to be a lipoma. Complete relief of symptoms resulted and the patient has remained well.

given. It is not unusual to find retention for days, even weeks.

Diverticulosis becomes a factor when through inflammatory changes a diverticulitis develops. Röentgen ray evidence of this consists in evidence of inflammation, spasm, rapid emptying, and swelling of the mucosa with a "saw tooth" appearance to the involved part. The sigmoid and descending colon are the most common sites for this lesion, though other areas may show involvement.

Benign tumors of the colon are not common unless we consider polyposis in this group and, as has already been pointed out, this lesion is usually a later manifestation of an inflammatory process. Other tumors, such

as fibroma, hemangioma, and lipoma do exist. The typical röentgen findings consist of a filling defect dependent upon the size and shape of the tumor.

Carcinoma of the colon has a high incidence of occurrence. Among malignant neoplasms of the gastrointestinal tract this location is second only to the stomach. As to the location of the lesion in the colon, any part may be involved, but the sigmoid is the most frequent site.

Fig. 3: This case is a little unusual on account of the paucity of symptoms and their very brief duration. He gave no symptoms referable to the gastrointestinal tract until two weeks before examination, dating these from a dietary indiscretion. You will note a "napkin ring" deformity in the transverse colon near the splenic flexure, with almost complete obstruction. The marked distention of the small intestine is rather surprising, considering the brief period of symptoms.

In advanced cases of carcinoma of the colon the röentgen findings are marked and interpretation relatively definite. Typical findings may include one or more of the following: Filling defect either of the "napkin ring" type or irregular and fungating in character; obstruction of varying degrees; dilatation proximal to the lesion; changes in haustrations; changes in the mucosal pattern.

The type of lesion giving annular "napkin ring" defects is usually located in the left colon. Evidence of obstruction is an early finding in this type of lesion. The medullary or cauliflower type occurs most frequently in the cecum and rectum. Obstructive findings are usually late.

Changes in haustration and in the mucosal pattern are more difficult to demonstrate, but a study from this standpoint is frequently necessary in making a differential diagnosis between carcinoma and an inflammatory lesion. In case of carcinoma the area involved is usually abruptly delimited from the uninvolved parts adjacent, while an inflammatory lesion shows evidence of swelling of the mucosa, frequently giving the "saw tooth" margins. In carcinoma, destruction of the mucosa is the expected finding.

Double contrast methods and mucosal studies are important. A carefully done examination or series of examinations in suspicious cases will increase the percentage of

Fig. 4: Lesion of the cecum due to amebic infection.

correct diagnoses, especially in the early cases. One of our problems here, as in carcinoma elsewhere, is early diagnosis.

For a better understanding of the next group of slides a brief history of the case will be given.

The patient is a white lady, 39 years old. She was admitted with a temperature slightly above 101 and complaining of pain and tenderness in the right lower abdomen, loss

of weight and diarrhea with blood-stained stools.

The patient stated that an appendectomy had been done about one and one-half years previous to admission for an "abscessed appendix." One year before this present admission she had been treated for a lesion of the rectum, evidently inflammatory in character. The physician, who had charge of the patient at that time, states that examinations for ameba were made and that these were negative.

The significant findings in an x-ray examination of the colon were a narrowed funnel-shaped cecum and a slightly atonic terminal ileum. The pathology was considered inflammatory in nature. No comment was made as to the probable causative organism.

At operation it was found that "the cecum was thickened and indurated. There were

Fig. 5: Elevation of the right diaphragm due to amebic abscess of liver. Same case as Fig. 4.

ulcerations of the cecum and colon." The terminal ileum, cecum and ascending colon were removed by a modified Mikulicz's operation. Four days later evidence of intestinal obstruction developed and an enterostomy done. At this time there was an anuria with high retention of nitrogenous products. These symptoms subsided after a few days, and the patient ran a seemingly satisfactory course for about one week, when a febrile course began and persisted over a prolonged period. A portable x-ray examination of the chest, Slide No. 15, showed nothing in the lung fields to account for the temperature but a marked elevation of the right diaphragm.

A large amount of pus was aspirated from the liver and the patient was given appropriate treatment for an amebic infection. Recovery was rapid and satisfactory.

From the standpoint of röentgen examination of the colon the question which this case brings up is, "Should a diagnosis of amebic infection have been suggested by the x-ray findings?" In view of the type of the lesion, its location and the history of an inflammatory lesion of the rectum it is felt that this organism should have been suggested as a possible factor. Of course studies for ameba had been persistently negative all through the history of the case, but these when negative, are not to be depended on. Perhaps the complement fixation test may prove to be a help to us with these cases.

Dermatitis Due to Nail Polish

"Contact dermatitis (inflammatory skin eruptions) due to nail polish probably is more common than the number of reported cases indicates," Francis A. Ellis, M. D., Baltimore, and Hayden Kirby-Smith, M. D., Washington, D. C., declare in *The Journal of the American Medical Association* for January 4, in a report on five such cases.

The eruptions occurred chiefly about the face, eyelids, neck and arms. The surface of the fingers near the nails in some cases was not affected. This was probably due to the thickness of the skin of these areas, the authors explain.

From patch tests with the ingredients of nail polish they conclude that any ingredient may act as a sensitizer but that the more likely agents are the clear lacquer and the dyes.

Since their article was accepted for publication, the authors report, they have seen four additional patients with dermatitis on the face due to nail polish. All gave positive patch tests to a finger nail polish in contrast to those reported by Lester Hollander, M. D., in *The Journal* for November 16.

CLINICAL USES OF NEGATAN

By EDNA MYERS JEFFREYS, A. B., M. D.
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DURING the past two years a new product, negatan (Lilly), has been used experimentally and found of value in the treatment of vaginal and cervical infections.

This product is the result of the accidental discovery in 1938 that an old chronic ulcer on the hand of a man employed in the hemp industry in Philadelphia healed very promptly, apparently due to contact with some chemical substance with which he was working. The substance proved to be a colloidal organic condensation product formed by reacting cresol sulfonic acid with formaldehyde. It was first employed clinically in the gynecological departments of the Graduate Hospital of the University of Pennsylvania, and in Woman's Hospital, New York City, and since then has had wide investigational use.

Our series of cases has of course been small in comparison with the number treated in larger clinics, but the results have been so consistently good and in some cases so astonishing that they deserve mention. Since July, 1939, 1,448 obstetrical and gynecological cases have been treated in our clinic for vaginitis and cervicitis. It has been our custom to treat all except mild cases of chronic cervical erosion with the actual cautery, followed in two weeks to one month by application of 100 per cent negatan solution to the cervix and endocervix. This stimulates epithelization and continued healing.

The majority of cases of vaginitis were found to be due to Trichomonas infestation. The number of such infections, proved by microscopic examination of a suspension from a swab introduced into the vagina and placed in a few c.c. of warm normal saline, was consistent with the percentage of larger clinics. Paul Peterson, from the United States Naval Hospital of San Diego, California, reported that 24.6 per cent of 5,712 obstetrical and gynecological patients showed smears positive for Trichomonas.[1] Out of 500 obstetrical cases, 23 per cent harbored Trichomonas in the vaginal fornices, according to a report by Trussel, Iowa City.[2] The usual symptoms resulting from Trichomonas vaginitis are: itching, burning and tenderness about the vagina, with an annoying thin, purulent leucorrhea.

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We have found one of the most important uses of negatan to be in treatment of Trichomonas infections. Even a weak solution of negatan destroys and coagulates all Trichomonads instantly. This can be demonstrated easily by the microscope.

Our routine method of treatment of Trichomonas vaginitis has been as follows: After confirming the diagnosis microscopically, a bivalve speculum is inserted and the vagina cleaned thoroughly with dry cotton applicators. Then 100 per cent negatan is applied well into the endocervix and to the vaginal walls. A small amount of the solution is touched to the urethral meatus after removing the speculum, and the introitus, vulva and anal regions are likewise painted. The patient is given 10 per cent negatan suppositories, and instructed to insert one well into the vagina each night after retiring, using a clean rubber glove for insertion. The first suppository is

inserted the second night after local treatment. The patient is advised to use no douches until the morning after use of the sixth suppository, when she uses a one-half gallon plain water douche and returns for a second local treatment. Six additional suppositories are again used, and after the third local treatment, there are usually no subsequent symptoms. It is well to instruct the patient in regard to preventing reinfection, since the lower intestinal tract may harbor this parasite. Washing about the anal region with a bland soap after each bowel movement and always with a backward instead of forward motion, will help prevent vaginal contamination. If a catheterized specimen of urine contains Trichomonads, caprokol (Sharp and Dohme) administered by mouth for a few days will eliminate this focus of infection. If the protozoan is found in the stool, gentian violet tablets by mouth will destroy these. Other modes of reinfection must be guarded against, such as: rarely, Trichomonads in the genitourinary tract of the male; also infection from other members of the family, such as might occur in use of toilets without flushing, bathtubs, douche nozzles, etc. We have obtained recoveries with negatan in a number of cases of Trichomonas vaginitis which did not respond to other types of treatment and which had persisted in spite of there being no obvious source of infection.

CASE REPORTS

Other forms of vaginitis, especially cases of chronic ulcerative vaginitis, have been found very responsive to use of negatan. The following case histories will illustrate this:

Case 1: Mrs. J. J., aged 26, married.

History: First seen on March 20, 1938, complaining of vaginal tenderness, dysuria, and frequency of urination.

Examination: General and pelvic examinations were negative. On inspection, the cervix was found to be cystic and eroded and there were superficial miliary vaginal ulcers about the introitus and in the posterior vaginal fornix. Cystoscopic examination showed small white plaques on the trigone near the vesical neck and some inflammation of the posterior urethra. Pyelograms were normal.

Laboratory: Urinalysis of catheterized specimen was negative except for 0-3 W. B. C. per H. P. F. and culture showed presence of B. coli. Wet vaginal smears proved no Trichomonas vaginalis present. Gram stain showed moderate number of yeast cells.

Treatment: Cervix was cauterized with the actual cautery and douches advised. Ulcers in bladder were treated with two per cent silver nitrate and urinary antiseptics given.

The condition of the cervix and bladder improved, but in spite of prolonged treatment with gentian violet the vaginal ulcers did not heal and the patient's vagina was so tender that when seen on August 18, 1939, she had been unable to have coitus for one year.

On this date her vagina was painted with 100 per cent negatan. No suppositories were used, because at that time they were not available. On September 9, 1939, the vaginal ulcers were found to be almost healed. Her vagina was again treated with 100 per cent negatan and on October 14, 1939, no ulcers could be seen, the vaginal mucosa was normal and the patient was having intercourse regularly without pain or soreness. Recent communication on December 20, 1939, confirmed that she is still symptom-free.

Case 2: Miss Anna G., a spinster, aged 53. Seen first on October 19, 1939.

Her chief complaint was vaginal discharge and tenderness, for three years. She had been told that she had gonorrhea. This misinformation resulted in a severe neurasthenia.

On vaginal examination, a small marital introitus was found, red and irritated. The Bartholin and Skene's glands and the urethra were negative. Uterus was found atrophic and in body axis. Adnexae not palpable. The cervix was small, smooth and nulliparous. The vagina showed denuded, hemorrhagic patches, with chronic ulceration and diffuse redness.

Wet smears showed no Trichomonas vaginalis, few bacteria and squamous cells, many pus cells. Stained smears from the vagina, cervix and urethra showed no gram negative intracellular diplococci. Many gram negative, small bacilli were seen.

Vagina was painted with 100 per cent negatan and 12 negatan suppositories, 20 per cent, given,

with directions to insert one suppository each night after retiring, beginning on the day following her clinic visit. A plain water douche was advised every three to four days. When the patient returned after all suppositories were used, her vagina was found almost normal. She was treated again with 100 per cent negatan, and on her return visit November 18, 1939, all denuded areas were found completely healed and she was discharged.

Case 3: Mrs. L. P., aged 32, married.

Had been treated repeatedly in the clinic and finally admitted to the hospital, because of severe ulcerative vaginitis of eight months' duration. Her blood Wassermann and Kahn tests were negative. Smears showed a great variety of organisms and few pus cells. Sections showed no Donovan bodies.

Cervix had been cauterized and ulcers were treated with silver nitrate, with only temporary benefit.

Smears on December 11, 1939, showed presence of Trichomonas vaginalis. Bi-weekly treatment with 100 per cent negatan and use of negatan suppositories affected an apparently complete cure after three weeks.

TOXIC EFFECTS

Ulcers associated with leukoplakia and senile vaginitis respond to use of negatan, as does denudation of mucous membrane following prolonged vaginal packing or radium therapy. Relief from irritation about the urethral orifice, and removal of small polypi and small caruncles may be accomplished by use of negatan solution.

We have noted absolutely no toxic effects of any kind. Two patients complained of slight soreness while using suppositories, but the mucous membrane in these cases did not appear to be irritated. A white coating results when a mucous membrane is painted with 100 per cent negatan, but there seems to be no actual chemical cauterization and patients complain very little when this solution is applied. The coagulum peels off the vaginal wall and cervix after a few days, in the form of a parchment-like covering, leaving a smooth and normal mucosa beneath. The suppositories form a fine, cheese-like mass in the vagina, thus penetrating into all the folds of mucous membrane. The suppositories ordinarily produce no discomfort and do not require wearing of a napkin. Relief of symptoms is obtained very soon after beginning treatment.

SUMMARY

1. A series of 1,448 cases is reported in which has been employed negatan solution, 100 per cent for treatment of vaginitis and cervicitis.

2. Negatan suppositories, 10 or 20 per cent were used, along with negatan solution, in 58 cases of Trichomonas vaginitis with recovery in all cases except one. This required other methods of therapy. There were seven recurrences, apparently cured by repetition of treatment and elimination of foci of infection.

3. Three cases of previously intractable ulcerative vaginitis are reported cured with negatan.

4. Response to treatment with negatan has been found in the following other conditions:

(a) Mild chronic cervicitis in virgins.

(b) Chronic cervicitis during pregnancy (cases in which use of cautery was contraindicated).

(c) Senile vaginitis and chronic ulceration associated with leukoplakia. (Estrogenic hormone also indicated).

(d) Vaginitis following radium therapy for carcinoma of cervix or after prolonged vaginal packing.

(e) Follow-up treatment of cervix two to four weeks after cauterization with the actual cautery.

(f) Skenitis or irritation about the urethral meatus.

(g) Removal of very small urethral caruncles or of small polypi.

5. No toxic effects or reactions have been noted from the use of negatan. A coagulum forms after application, which peels off within a few days, leaving a normal mucosa beneath.

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IMMEDIATE METABOLIC EFFECT OF BENZEDRINE SULFATE IN MAN

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SINCE the report of Lagen, Soley and Leake[1] on effects of repeated administration of benzedrine (amphetamine) sulfate on metabolic rate, there have been several studies with man and experimental animals. A few of these are noted by Beyer;[2] some 15 studies have come to our attention but there is no need to cite them individually here. These reports have dealt chiefly with immediate metabolic effects of benzedrine and for the most part have been carefully controlled intensive studies of a few subjects. The usually minor degree of metabolic change produced by full therapeutic doses of benzedrine is well recognized, but knowledge of extreme effects on metabolism of susceptible patients is not complete. Such knowledge may be obtained through further studies similar to the present work, or through investigation of metabolism of patients showing cardiovascular or central nervous system idiosyncrasies to benzedrine. It is also desirable to have more extensive data on the relation of basal metabolic rate to metabolic effects of benzedrine.

THE AUTHORS

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EXPERIMENTS

Benzedrine sulfate, 20 mg., was given orally to 20 young healthy adults. All but two of this group were medical students who had previously had one or two basal metabolism tests, although none could be considered a trained subject. All cooperated intelligently. Values found during the basal state agreed well with similar tests taken four to six weeks previously. Tests were made with a Sanborn motorgrafic apparatus, with fresh soda-lime after every 30 tests. CO^2 absorption was never faulty.

After basal values were established by repeated tests if respiratory records were irregular, benzedrine was given with 50 to 100 c.c. of water. Oxygen consumption was again measured after 30, 60 and 120 minutes, and in a few instances after 180 or 240 minutes. At least 15 minutes of rest preceded each test and a few tests were made in duplicate. Maximum metabolic effects occurred early in most individuals. Pulse rate was noted just before and during each test.

Results are presented in Table I. The mean basal metabolic rate for the group was six per cent less than "normal" Sanborn averages, with a standard error of $\pm$ two per cent. Theoretically normal O^2 consumption values, from Sanborn tables, are given in Table I. Mean pulse rate during the basal state was 68 $\pm$ 1.5. After benzedrine, mean maximum increase in metabolic rate was 15.7 $\pm$ 3.1 per cent of the determined basal rate. The mean maximum increase in pulse rate was 12 $\pm$ 2.6 per cent of the control. Slight decreases occurred in some instances and the mean maximum decreases for the group were three $\pm$ one for metabolic rate and five $\pm$ 1.5 for pulse rate.

Further study was made of effects of 10 mg. of benzedrine sulfate on pulse rate and blood pressure in 18 students of whom seven were included in the metabolism study. Observations were made one and two hours after ingestion of benzedrine, with subjects in the postabsorptive rather than the basal state.

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Mean values showed only minor changes. In per cent variation from control values, at one and two hours respectively, pulse rate was minus five and minus three; systolic pressure, plus one and plus four; diastolic pressure, plus six and plus five, and pulse pressure, minus two and plus 7. None of these variations was statistically significant and wide individual variation was noted.

DISCUSSION

The following conclusions regarding effects of therapeutic doses of benzedrine sulfate may be drawn. (a) Oxygen consumption is increased slightly in most individuals and a few may show larger increases. There is no sex difference in this response. (b) Pulse rate is also usually slightly increased after 20 mg. but not after 10 mg. (c) The agent is rapidly absorbed from the intestine. (d) The psychic effects outlast the stronger metabolic effects. (e) The magnitude of metabolic response is inversely correlated with the basal level.

(a) The mean maximum increase in O^2 consumption of 15.7 ± 3.1 per cent is in agreement with the minor metabolic effects found by other investigators. Beyer[2] reports a mean increase of 15.4 per cent in eight individuals after 30 mg. and also notes the rapidity of response. Relatively large increases occurred in two individuals in the present series, one with and one without accompanying increase in pulse rate. There is no significant difference between mean maximum increase noted in the five girls tested and the rest of the series; one showed a decrease of 13 per cent, but the mean maximum increase was 12.6 ± four per cent.

(b) Pulse rate also showed a statistically significant small increase but the clinical significance of this is negligible. An increase was noted in 16 of the 20 students. After 10 mg., the mean decreased slightly, but conditions were not as well controlled in this series. By inspection of Table I, a correlation of the magnitude of increases in metabolic and pulse rates is apparent in most instances but not in all. Quantitative comparison with epinephrine is of interest: 0.5 mg., subcutaneously, increases metabolic rate 15 to 40 per cent[3] and pulse rate about 10 per cent.[4]

(c) Despite its effect on gastric motility,[5]

TABLE I.

Metabolic Response to 20 mg. Benzedrine Sulfate Given Orally

Subject	Sex	B.M.R.	Pulse	Normal O_2 used	O_2 used at Time intervals after ingestion, hours 0	0.5	1	2	3	4	Maximum Increase Metab.	Increase Pulse	Decrease Metab.	Decrease Pulse
		(% dev.)	(min.)		(cc./min., corrected)						(% of control)			
H. McC.	M	−17	65	262	218	226	264	310	–	–	42	46	–	1
S. C. B.	M	−17	72	223	186	208	248	220	–	–	33	–	–	17
J. H. M.	M	−14	62	240	207	216	213	229	229	–	11	6	–	–
L. W.	M	−14	50	249	213	212	216	226	211	–	6	11	1	–
E. B. C.	F	−12	80	211	186	196	195	170	226	–	22	20	9	–
P. D. C.	M	−12	64	288	253	–	257	284	–	–	12	3	–	6
J. S. R.	M	−11	70	260	232	223	358	298	–	–	54	–	4	14
M. R. C.	M	−11	74	252	225	229	246	238	243	–	9	19	–	–
A. M. D.	M	−11	64	271	242	242	288	243	–	–	19	29	–	–
M. I. S.	F	− 9	72	203	185	–	220	202	–	190	19	22	–	–
B. S.	M	− 8	64	251	230	238	237	247	236	–	7	9	–	–
C. R. S.	M	− 7	62	261	243	–	296	301	–	–	24	16	–	–
H. M. B.	F	− 7	80	189	176	187	194	177	186	–	10	15	–	20
V. M. F.	F	− 6	68	221	208	–	220	233	–	210	12	12	–	–
G. M. K.	M	− 2	68	238	233	231	232	269	247	–	15	6	1	12
P. E. V.	M	2	72	228	233	224	255	266	–	263	14	8	4	3
J. E. S.	M	3	74	287	296	302	268	294	–	300	2	3	9	4
R. L. W.	F	7	72	216	231	203	202	201	213	–	–	–	13	14
R. W.	M	10	64	238	262	243	258	262	267	–	2	16	7	3
W. H. R.	M	14	68	252	287	273	267	282	–	–	–	–	7	6

benzedrine is rapidly absorbed since metabolic effects are maximal in one to two hours.

(d) Most of the students complained of wakefulness 14 to 16 hours after taking 20 mg. of benzedrine although several did not know the nature of the agent taken. It is well to note that the subjects were medical students.

METABOLIC RESPONSE AND BASAL LEVEL

(e) Data of several investigators suggest that the magnitude of metabolic response is inversely correlated with the initial basal level. A large series of observations is desirable to test this point since technical errors may easily cause an apparent false relationship. All common errors in determining basal metabolism are positive, particularly for untrained subjects. If the basal level is falsely high, the apparent response to benzedrine will be minimized. Therefore, in the present series, care was taken to have the individuals in a basal state. Agreement of tests with prior determinations of basal values and the low mean value, minus six per cent of Sanborn "normals", for the group are assurance that positive errors were not great, if present. Intradaily variation of basal metabolism is another source of error. Beyer[2] controlled this factor by determining variations in individuals given placebos and found a deviation of only 1.7 per cent. In our experience, a few repeated tests at intervals up to four hours were in good agreement.

If the series reported in Table I is arbitrarily divided into equal groups of 10, the mean maximum increase in metabolic rate in the group with basal levels of minus nine to minus 17 is 23 ± five per cent, while for the group with basal levels of plus 14 to minus eight it is nine ± 2.5 per cent. The difference between these means is 14 ± 5.5, which indicates a high degree of significance. Even if the abnormal response is discarded, there is still a highly significant difference between meals, 10 ± 4.6. The Pearson correlation coefficient for the series of 20 is —0.63 ± 0.09. A correlation coefficient greater than 0.7 or more than six times its own probable error is considered to show a definite correlation of the variables; a coefficient of 1.0 shows perfect correlation.

It is of interest that Lagen, Soley and Leake[1] found that the remote metabolic stimulating effects of benzedrine, 24 hours after administration of 20 mg., were greatest for the two of their three individuals with the lowest basal levels.

CLINICAL SIGNIFICANCE

The present study confirms reports of Beyer[2] and others that therapeutic doses of benzedrine do not ordinarily give rise to marked increases in metabolic rate. These minor metabolic effects of benzedrine are not solely responsible for success of therapeutic use of this agent in obesity. Other important factors are the decreased food intake and the increased muscular activity of the obese patient, or a shift from predominantly anabolic to predominantly catabolic metabolism. It is well known that benzedrine decreases appetite and apparent fatigue, and enables the patient to follow a strict dietary regimen more easily. Together, these effects result in loss of weight. Often after correct eating habits are re-established it is possible to stop medication, which emphasizes the relative unimportance of the metabolic effect.

The smaller increase in metabolic rate after benzedrine in patients with high basal rates than in those with low basal rates is of interest in regard to use of this agent in hypothyroidism and hyperthyroidism. However, whenever hypertension is present, benzedrine must be used with caution and it is also contraindicated in coronary disease because of possible occurrence of moderate or severe vasoconstriction. Initial test doses of 2.5 to five mg. are recommended for routine use in all patients whose susceptibilities have not been determined, even though conditions contraindicating its use in full therapeutic dose are not apparent. Considerable individual variation in effects other than its metabolic and circulatory actions also occurs and it is best to use the smallest effective

dose. If desired effects are not obtained with the usual suggested therapeutic doses (10 to 20 mg., or 40 mg. in conditions such as narcolepsy), they are rarely obtained with higher doses although amounts as great as 200 mg. a day have been used in certain depressed states. Benzedrine sulfate is now available in five mg. slotted tablets which should be a more generally useful form for prescription than the 10 mg. tablets, particularly in patients inclined toward self-medication.

ACKNOWLEDGMENTS

We are grateful to members of the sophomore classes of 1937-1938 and 1938-1939 of the School of Medicine for their cooperation, and to the Smith, Kline & French Laboratories, Philadelphia, for a supply of benzedrine tablets.

SUMMARY

Benzedrine sulfate, 20 mg., was given orally to 20 young adults, including five females. Mean maximum increase in O^2 consumption was 15.7 ± 3.1 per cent of the basal level. Two individuals showed increases of 42 and 54 per cent respectively, and one a decrease of 13 per cent of the basal level. Correlation of magnitude of metabolic effect with basal metabolic rate shows a significant inverse relationship.

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ACUTE GONOCOCCIC PERIHEPATITIS

By A. P. HUDGINS, M. D.
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In 1929 Curtis described a condition which he called gonococcic perihepatitis. Comparatively little on this subject has appeared in the literature. The clinical picture is rather definite and yet, unless borne in mind, can easily be confused with other disease processes.

Curtis first mentioned this condition in connection with the finding of "violin string" adhesions between the anterior (ventral) surface of the liver and the anterior abdominal wall. The characteristic location and type of adhesive cords has been previously mentioned. In addition, Curtis noted the frequency with which this pathology was associated with evidences of gonorrheal disease in the pelvis.

The adhesions are thought to develop chiefly during the acute attacks of the pelvic infection. "Violin string" adhesions do not seem to be serious from the standpoint of complications, recurrence, or chronic suffering, unless there is a recurrence of pelvic infection. The early symptoms vary from mild to severe. The symptoms are apparently self-limited and little is to be gained by breaking up the adhesions at the time of operation.

THE AUTHOR

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No definite statement can be made as to how the infection spreads up to the liver; perhaps it is by way of the retroperitoneal lymphatics, the portal vein, or the peritoneal surface of the colon, since no doubt peritoneal infection exists beyond the confines of the pelvis more often than is suspected in "gonorrheal pelvic peritonitis."

When upper right abdominal pain is encountered in women with pelvic pathology,

perihepatitis should be considered. The presence of gall-bladder disease should be definitely confirmed before radical treatment is advised. Palliative measures are adequate when perihepatitis is the cause of pain.

DIFFERENTIAL DIAGNOSIS

Upper right quadrant abdominal pain is frequently diagnosed as perinephritic abscesses, torsion of the ureter, calculi in the kidney pelvis, or gall-bladder disease (either cholecystitis or cholelithiasis). The pain at times radiates to the right shoulder or down to the pelvis and may be associated with anorexia, nausea, vomiting, chills and fever. Pleurisy or pneumonia may be suspected due to pain over the lower right chest on deep breathing; rapid respiration, and increased pulse rate.

Careful laboratory examinations are necessary to rule out these possible errors. X-ray of the gall-bladder may not be conclusive. It is at times impossible to get a clear gall-bladder and calculus shadow.

Inflammatory processes from peptic ulcer, pancreatitis, diverticulitis, or an inflamed high appendix may cause adhesions about the liver. Usually in gonorrheal perihepatitis the symptoms are localized more definitely.

SYMPTOMS

History and pelvic examination are very important. There is a history of pelvic pain, vaginal discharge, dysuria, perhaps with some temperature, occurring in repeated attacks or with an onset suggestive of a gonorrheal infection, acute or chronic. The physical examination may reveal one of the criteria of a Neisserian infection, namely, involvement of Bartholin or Skene's glands, purulent discharge or bilateral adnexal disease. The smear may or may not be positive for gonococci.

The upper abdominal pain usually comes on suddenly, is severe in character and localized in the right side. As a rule it is worse under the ribs in front, though there may be some pain posteriorly or referred to the shoulder blade. These are the symptoms usually related to the digestive and respiratory tract, belching, gas discharge and nausea. The patient "splints" herself by a characteristic slight anterior flexion at the waist when sitting or standing. Breathing is shallow and restricted. The patient is definitely in acute distress.

DIAGNOSIS

The patient with acute upper right abdominal pain should have a pelvic examination (including smear) to rule out gonorrhea. If this infection is found there is a possibility that this upper abdominal pain may be due to perihepatitis. To be sure, more careful examinations are advised including physical, röentgenological and cystoscopic, to exclude kidney involvement, gall-bladder disease and pleurisy or pneumonia. The suspicion of this condition often leads to a correct diagnosis and simplifies the treatment.

TREATMENT

Redewill presented hyperpyrexia as a specific form of therapy, reporting remarkable improvement after only one treatment. Ordinarily, several weeks are required before improvement begins.

The author has found sulfanilamide quite effective; the patient being made comfortable after one or two days. The dosage used is twenty grains every four hours for two days, then fifteen grains every four hours for two days, then five grains every four hours for one week. The general condition of the patients necessitated confinement to bed in the two cases reported herewith.

CASE REPORTS

Case 1: White female, age 25, examined in office January 24, 1940, complaining of acute right upper abdominal pain. The patient was walking slowly with semiflexed posture and breathing with difficulty. She could not lie down comfortably. The position of bending slightly forward gave some relief. The pain, reported as a neuralgic aching in the upper abdomen, was first noticed two days previously with sudden onset of severe pain on the second day. A slight cough was reported. Temperature was 97.6, the pulse 88.

Examination: Lungs clear. The abdomen showed tenderness in the right upper and both lower quadrants. Pelvic examination showed the vulva to be negative; the uterus anterior in position,

normal in size, movement painful. The cervix was clean with a slight whitish discharge. Smear from the cervix was negative for gonococci. There was acute tenderness over both adnexa with masses to the left and right with side movement limited.

The patient had syphilis and had recently received treatment for a Neisserian infection. She had previously had an abortion which no doubt lighted up an old latent infection in the tubes.

She was put on sulfanilamide and short wave diathermy to the pelvis with a resultant speedy recovery from her upper abdominal pain. Her pelvic masses were reduced both in tenderness and size.

Case 2: A seventeen year old white female was first seen February 26. She was walking slowly, semi-flexed, complaining of upper right abdominal and pelvic pain. The upper abdominal pain was acute and sudden in onset. The lower abdominal pain started about one month previously, associated with vaginal discharge at which time her local physician had given her some tablets (sulfanilamide) which she took for a while.

Examination: An acutely ill patient with a temperature of 99.2 and pulse 88. The lungs were negative except for a restriction of breathing due to the pain. The abdomen was tense with acute tenderness in the right upper and both lower quadrants. The pelvis was too acutely inflamed at the time of the first visit to do a satisfactory examination. Later, when the tenderness had subsided somewhat, pelvic examination showed the vulva to be negative; the cervix was posterior, ulcerated and showed a moderate yellow discharge. The uterine body was anterior to the right, acutely tender and movement was limited. Bilateral adnexal masses were present, both acutely tender. The smear contained intracellular diplococci, not characteristic of gonococci, but the patient had received previous treatment. The husband gave a positive history of gonorrhea.

The patient was put to bed and sulfanilamide administered. Later, diathermy to the pelvis was given. The relief of pain was rather prompt under this therapy.

CONCLUSION

Female patients with upper right abdominal pain suggestive of gall-bladder diseases, "colitis" or pleurisy may be suffering from gonorrheal perihepatitis. The symptoms may be acute or chronic with formation of violin string adhesions.

Extrapelvic gonorrheal infection may include not only proctitis, endocarditis, arthritis and ophthalmia, but also perihepatitis.

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Prof. Bldg.

Experimental Nerve Inflammation

A significant approach has been made on the question of experimental peripheral neuritis (inflammation of the nerve endings or of terminal nerves), *The Journal of the American Medical Association* for January 25 declares in an editorial discussing the experiments of five Minnesota investigators.

The work of R. N. Bieter, A. B. Baker, J. G. Beaton, J. M. Shaffer and T. M. Seery in confirming previous pathologic studies on sulfanilamide, *The Journal* says, "strengthens the claim that the chicken is a good test animal for peripheral neuritis with the sulfonamide group of drugs. Even if the chicken should be shown to be one hundred times more sensitive to this pathologic reaction than man —and as a guess this figure does not seem to be out of proportion at present—this species may serve a useful purpose in helping to determine the comparative safety of a given drug in the series. Up to the present time this has been impossible.

"Turning now to the drugs that have been studied by the Minnesota investigators, one can say that the clinical evidence concerning peripheral neuritis following the administration of sulfanilamide and sulfapyridine—the two least harmful of the drugs in their series—is certainly not extensive. Uliron and sulfamethylthiazole appear at present to be capable of producing this injury in man too frequently to warrant their routine clinical use."

A REVIEW OF EPILEPSY*

By W. F. DANIELS, M. D.
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THE definition of epilepsy given by Hippocrates is a "chronic functional disease characterized by fits or attacks in which there is a loss of consciousness, with a succession of tonic or clonic convulsions." With more recent developments it has been defined as a "recurrent disturbance in the electrical activity of the brain which manifests itself in a symptom —complex of which impairment or loss of consciousness, autonomic nervous manifestations, convulsive movements or psychic disturbances are the essential components."

We are all more or less familiar with the customary division of the epilepsies into the essential or idiopathic and the symptomatic or Jacksonian. The essential epileptic was without acquired blemish of brain before the seizures began. The symptomatic epileptic was as other men until some injury or insult to the brain, either direct or indirect through some bodily disorder, and so disturbed the brain that seizures resulted. In recent years, however, many workers and observers have realized that causes of epilepsy are multiple, and seizures are only a symptom. However, there is a single element common to all epileptics and all persons having seizures are to a varying degree essential epileptics. Admitted this "seat" of consciousness and source of convulsions is the brain, we are still in the dark as to the mechanism which is responsible for the convulsive state and its attendant loss of consciousness and amnesia.

All of this is an argument of academic classification which we can pass up except we rather faintly hope that the next case of epilepsy we wrestle with will be found to belong to the symptomatic group and have a remedial cause.

*Read before the Junior Medical Society, Huntington, West Virginia, November 7, 1940.

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One author lists more than sixty conditions termed "symptomatic epilepsy" that have seizures as one of their symptoms. First are those defects of the brain which are congenital such as cerebral aplasia, cerebromacular degeneration, congenital idiocy, and tuberous sclerosis. Second, come those abnormalities produced either at birth or acquired later, as trauma or intracranial hemorrhages at birth, sinus thrombosis infections (with their resulting chronic arachnoiditis) as encephalitis, meningitis, general paresis and cerebral abscess. Then there are hemorrhage, gliosis, scars, trauma, senile degeneration and the changes associated with arteriosclerosis, calcification, tumors, parasitic cysts and multiple sclerosis. Third, are numerous medical conditions and intoxications such as uremia, water and alcoholic intoxication, cerebral edema, pernicious anemia, polycythemia, hemorrhage, asphyxia, carbon monoxide poisoning, oxygen intoxication, protein shock, anaphylaxis, Raynaud's disease, acute fever in children, angioneurotic edema, Stokes-Adams syndrome, orthostatic hypotension, carotid sinus tumor, migraine, craniofacial hemiatrophy, tetany, insulin shock, hyperventilation and hysteria. Fourth, are those drugs which if given in large enough dosage will produce convulsions in man as well as in animals. These include cocaine, strychnine, magnesium sulphate, picrotoxin, absinthe, thujone, camphor, caffeine, ergot, nicotine, lead and epinephrine.

The proportion of seizures in persons sick with any of these conditions varies greatly

with the pathologic condition and we have that great group ill with these conditions that do not have seizures. Not much can be said of the pathology or pathogenesis. They are less understood than the etiology. Certain conditions of the cerebral cortex, of the blood, of the spinal fluid have been found in a few epileptics, only to be absent in others.

The symptom complexes of epilepsy have been divided into grand mal, petit mal and the third class labeled equivalents or physic variants. The first with convulsions, the second with short lapses of consciousness and the third with prolonged periods of impairment of consciousness. The pictures of these phenomena are well known and it is difficult to describe a typical attack of either for they vary widely.

The diagnosis of epilepsy or convulsion is made for us by the statement of the patient or by our personal observance of an attack. However, attempt at classification may be very difficult. Our first duty is to rule out the sixty odd conditions previously mentioned. Then it may be that in addition to our detailed history, it may be necessary for us actually to view an attack.

ELECTROENCEPHALOGRAPHY

In addition to these, it is often possible to diagnose epilepsy or detect the early evidence of it by electroencephalography through the investigations of Gibbs, Gibbs, Lennox and Davis. This is a continuation of electrophysiology beyond the observation and definite proof by Hans Berger of Jena, Germany, that the brain beats electrically. The electric potentials of the brain can be "led off" from the intact skull, amplified a million-fold or more, and made to trace a record on moving film or paper. The process is analogous to the use of the electrocardiograph in the study of heart rhythms except the potential changes of the brain are only about one hundredth the voltage of the cardiac potentials.

In making this electrical record of brain activity, the patient reclines on a bed in a cubicle that is electrically insulated and protected from all outside sound. During recordings the patient's eyes are closed and the light extinguished. Electrodes are applied to the head on various surfaces and are connected to an amplifying and recording apparatus outside the cubicle. In normal persons the brain potentials are of 20 to 100 microvolts and they fluctuate about 10 per second. In epileptics during grand mal seizures, the tracing shows varying types of patterns which deviate considerably from the normal tracing in that they show oscillations of greater amplitude than 100 microvolts. Other characteristic tracings have made it possible to differentiate epileptic seizures from other psychomotor seizures. Furthermore, pre-epileptic symptoms have been detectable with characteristic recording. According to Gibbs, problem children, individuals with personality disorders and approximately one-half of near relations of epileptics are on what he calls the "epileptic fringe", as evidenced by definite observations on electroencephalograms.

The electroencephalograph has been clinically useful in two particular conditions. The first is that area of the cortex responsible for the beginning of these aberrations in epilepsy may be localized. The second is the localization of many cerebral lesions.

This latter use is debated by different investigators. Most have agreed the lesion must lie near to or have invaded the cerebral cortex to be identified by this method.

PROPHYLACTIC TREATMENT

In the prophylactic treatment little has been possible but observation. Especially observed should be those that have short periods of dizziness, sudden sleepiness, sleep walkings, night terrors, sudden muscle jerks, unaccountable falling or repeated fainting. It is hoped the electroencephalogram will aid us in discovering the pre-epileptics.

Removal of causes of symptomatic epilepsy such as birth injury, reduction of infections as syphilis, meningitis, etc., should also be urged. However, unless one is thinking particularly of epilepsy, their removal for it alone will probably never occur.

It is hoped that the electroencephalogram will, in the near future be our guide as to treatment. Many, many methods of treatment have been proposed or used but we find only a few methods and means practical. Little can be done for a patient during the seizure.

Efforts to shorten the attack seem futile and it is best to keep him from swallowing or biting his tongue, loosen his clothing and prevent any other injury that may threaten.

Our main aim should be to correct any abnormality in the body as well as the brain. This constitutes a field in itself requiring the judgment of the neurosurgeon, röentgenologist, endocrinologist, psychiatrist, and many others. Of course, our best hope for suppressing the seizures lies in this. Neurosurgeons have stated that definite pathology has to be present and removed before their efforts are successful. In other words removal of a benign focus of epileptic seizures as localized by the electroencephalogram does not benefit the patient; in fact, the scar tissue following the removal seems to make the seizures worse.

KETOGENIC DIET

Raising the seizure threshold so that the patient will not go on and have seizures is necessary to alleviate him, and when we throw up our hands about finding abnormalities to correct, it is the only method left. Increasing the level of sugar, calcium, cholesterol or of oxygen in the blood is of theoretical but not, in the average case, of practical help. However, the ketogenic diet has been shown to be of value in many cases. It maintains a state of acidosis over a prolonged period. It consists of about three grams of fat for each combined gram of protein and carbohydrate and gives sufficient calories to maintain body weight. The diet is wearisome, expensive and continued use requires self-denial by the patient and intelligent cooperation by the parents or family. Diets sufficiently ketogenic to produce a positive sodium nitroprusside test in the urine have lessened the number of seizures. Those not strong enough to produce a positive test are probably not effective.

Dehydration if properly maintained has given several workers satisfactory results. Fluids have to be restricted to the point of considerable discomfort from thirst. It can be maintained if the number of seizures is reduced. However, like the ketogenic diet, it is an abnormal body condition which is hard to reconcile with our advocated method.

General management of sufficient and regular sleeping and eating, also steady occupation (epilepsy being much worse when not occupied) through placement in circumstances not dangerous to the individual. Common sense rules of behavior should be the guide.

ANTICONVULSANT DRUGS

Since 1860 the bromides have supplanted the others. If the proper dosage is used (to point of not causing sleepiness) but reducing the seizures it is our standby drug. However, heavy ingestion and uncertain sensitivity has resulted in many disfiguring skin eruptions, somnolence, and decrease of mental alertness.

Phenobarbital has displaced the bromides to a large extent. The usual dosage is one and one-half grains daily but it may be increased for the symptoms. Probably one and one-half grains morning and night is the best dosage for the average patient. This drug may be interspaced with the ketogenic diet and dehydration regime is desired.

The latest anticonvulsant drug, sodium 5.5 diphenyl hydantoinate, dilatin sodium or as the British call it epanutin, was reported on by several at the A. M. A. convention at San Francisco in 1938. Following that it was given widespread publicity by the lay press as a certain cure for all convulsions. Fortunately it has been under continuous study by many since then and some of their reports issued. It is administered in one and one-half grain capsules and the amount should be that which will prevent seizures and will not produce toxic symptoms. This amount is determined for each patient and varies between three and nine grains a day (two to six capsules). No cumulative effect has been noticed but no rate

of excretion obtained. Most men advise against giving over nine grains a day for fear of toxic results. These toxic results are primarily gastric distress, even to the hemorrhage stage, dizziness, ataxia, nausea, blurring of vision, diplopia and skin reactions. The gastritis can usually be stopped by administering acids and any future drug with food but other toxic symptoms call for lessening or withdrawing it.

EFFECTIVENESS OF DILANTIN

Dilantin has proven effective in about two-thirds of the cases. Some other regime had to be resorted to in the remaining third. Its great advantage over phenobarbital and bromides is the absence of any mental depression even with large doses so common with the others. Almost unanimously investigators have found it so, some in substituting it for phenobarbital have noticed a quickening in the patient's mentality, others in the time that it has been used primarily, have avoided that mental deterioration so frequently seen in epileptics, especially of the grand mal type. It has been an argument for several years whether the deterioration was due to the disease or to the sedatives employed. This deterioration is known in spite of the disputed whisperings that some of the great men of history have been epileptics, usually it is claimed of the petit mal type.

In substituting dilantin for phenobarbital it is done gradually. Usually the one and one-half grain tablet is substituted for one dose of one and one-half grains of phenobarbital and after a week or so of medication another necessary dose of phenobarbital is substituted in the same manner until we have dilantin given alone. Some observers finding this unsatisfactory, have increased the dosage of dilantin to its maximum and then had to return partly or wholly to phenobarbital. The two drugs have been used simultaneously but not enough time has elapsed to evaluate this combination.

Obviously, symptomatic convulsions, particularly those due to remedial conditions, have the most favorable prognosis. The outlook is worse in congenital or early acquired cases with mental defects. Generally the earlier in life epilepsy sets in the less hope there is of remissions. However, some patients have convulsions in childhood which cease after a time never to recur. Others have attacks for a few years and then remain well. Some have increasing mental deterioration with their continued attacks.

If it is remembered that epilepsy is a disease much worse with sedentary habits or no occupation, the prognosis is made better in those cases that can be given safe occupations and are protected from solicitations of relatives and friends.

Sometimes this latter cause may necessitate a residence away from home, or institutional care may be necessary when the seizures become frequent or violent, when the intellect becomes so dulled or the behavior so trying. This resort has many sides and must be considered carefully. The patient placed in an institution may be relieved in not having to act normally in association with friends or relatives. Or friends and relatives may be more able to lead their normal lives without the epileptic. On the other hand, discouragement and hopelessness permeates most of these institutions and may react unfavorably on the patient. Usually our responsibility should be to protect the normal members of the family.

Typhoid and Paratyphoid

In reporting an apparent cure of a typhoid carrier by means of the drug soluble iodophthalein, James R. Enright, M.D., Honolulu, T. H., in *The Journal of the American Medical Association* for January 18 states that his case is an additional indication that further trial of this substance is warranted in typhoid and paratyphoid carriers. A previous report by two other authors cited its apparent success in a carrier of paratyphoid, a disease similar to typhoid.

After only three doses of the drug by mouth, the stools of Dr. Enright's patient were negative for the typhoid organisms. They will be checked for at least a year, he says, and if they continue to be free of organisms the patient will then be classified as carrier free.

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

Oliver Wendell Holmes admonished his medical colleagues to put themselves in the patient's shoes for that would make them more considerate and sympathetic. A physician, who has the gift of graphic description, gives us an objective account of his own sensations during a siege of tuberculosis and a thoracoplasty operation. The tuberculosis specialist as well as the general practitioner will read the account with interest.

Tuberculosis—An Intimate Chronicle

In 1932 the author discontinued medical school and entered a sanatorium with the diagnosis of moderately advanced tuberculosis. After more than six years of intermittent curing and working, it was decided to collapse the lung by thoracoplasty. Space permits only that part of the story which has to do with the operation. It was scheduled for a Thursday afternoon. The Monday of that week the patient entered the hospital for the routine laboratory tests. He forced fluids, did this patient, to the extent of three quarts a day and between meals he nibbled on a chocolate bar.

The morning of the operation arrived. The breakfast was a scanty one. The entire right side of the chest was shaved. But the event that he remembers most vividly is the enema, his first. He thought his intestines would break unless that eventuality were prevented by premature death from cramps. And he had prescribed enemata not knowing the sensation they produce.

Lunch consisted of six grams of sodium amytal. Soon he was asleep. Thereafter events grew hazy. He was awakened when the nurses came to dress him for the operation but the awakening was perfunctory. Faintly, he realized that one nurse was donning the boot-hose and another was sticking the hypodermic needle into his arm. He must have slept for he did not recall her extracting it. Nor could he remember anything of his transfer from bed to stretcher, the long ride from one building to another, down one noisy elevator and up another, nor the operation room itself. In fact, the next thing he knew he was back in his room, dusk had settled, a few friends were looking through the door and a nurse was beside him. He felt fine and fully awake.

Just then his doctor entered the room and in his bounding, cheerfully forceful way told him of the good result. "Four ribs practically entirely removed and the lung has collapsed nicely. You probably won't need any more surgery," he added.

That made the patient feel so well that he was tempted to climb over the side guards. The inclination was mental rather than physical and instead, he swallowed a little vichy and was happy to retain it. Nine p. m. The visitors and well wishers vanished. The nurse pressed out the lights as she withdrew into the corridor, and he was alone.

Well! With nothing to do his mind wandered to his pulse and his fingers were not long in following. He couldn't count it; it was so fast and irregular. But he felt well. Maybe he lay there for an hour when he retched suddenly, forcefully and unexpectedly. He thought his lungs and abdominal organs had popped out through his subclavicular region. He learned then, without aid of a dictionary, what the term exquisite pain means. Strangely enough the wound on which he was lying didn't bother him at all then. For the few subsequent retches he braced himself and instead of having them explode in his chest they were eased over the pharynx with little discomfort.

That first retch seemed to be the signal for the pain to begin. First there was hyperaesthesia around the mouth, probably due to the tightness of the anesthesia breathing cap. Next, all his teeth began to ache, and that's not hyperbole. They ached all through that first night. Later, his shoulder began to clamor for self assertion. He didn't sleep very well that night, and occasionally, with the assistance of the nurse, he would turn from back to side, or vice versa, over the big bandage, and each time, try as he would to prevent it, the cautious maneuvering always ended in a thud as if he were rolling up or down a curb.

That first postoperative night he had a drenching sweat, and was quite worn out waiting for the dawn. When it came he slept for some three hours and felt wonderfully improved.

That day when the urinal was handed to him at various regular intervals he could void all right, but it was accompanied by no urgency, only by a sensation of numbness, and he couldn't predict whether he would void an ounce or a pint. The second night the sweat was only dampening. Thereafter they were absent or too mild to be noticed.

The first postoperative days during those few minutes each day when the patient was turned on his unoperated side, dyspnea was almost suffocating. He noticed none at other times.

Although there was some discomfort in the op-

erated shoulder, the pain really didn't come in earnest until the third night. Then his back began throbbing in the region of the wound, and muscles that hadn't been incised were lame. About every half hour he would attempt to relieve the pain by changing his position. This produced more discomfort but little else; for, to the large bandage on his back was now supplemented a shot bag of the general size and shape of a rolled up Sunday newspaper. These two articles effectively kept him in his place.

The night wore on and he was feeling sick and irritable from pain and the lack of sleep; his former resolve to take no pantopon broke down, then and there. It was the first "hypo" that he ever received for the relief of pain. What a great drug it is. In a short time he felt comfortably warm and hazy, a delightful haziness. Gradually, an itchness appeared all over his skin. He remembered promising himself that he would scratch it later, but before he got to it the night passed, nor does he remember having slept. That didn't annoy him because sleep would have robbed him of that pleasant hazy experience. It was as if, after much work, he had dropped exhausted on the bed, too tired to sleep, and had disintegrated into two people. The one who had pain was unimportant; the important, the conscious one was looking nonchalantly on and not minding it.

On the fourth postoperative day, a small three-pound shot bag was cradled in the right subclavicular region. It later was accompanied by a severe headache in the right frontal and occipital regions. The patient had never been subject to headaches, and the occurrence of headache after wearing that shot bag, and a larger one, was noticed too frequently to be mere coincidence. There was a relationship between them.

Saturday, two days postoperatively, he had his second enema. The following Monday he had his last. They confirmed his original opinion of them. They gripe—and that's not slang.

The big bandage was removed one week postoperatively, as were the skin sutures. The scar was a nice one. Naturally he was interested in trying to move his arm. There were definite weakness, soreness and limitation of motion, but he could move it surprisingly well. He roughly estimated it to have maintained about three-fourths of its normal function in all directions. Thereafter, each day, he grabbed hold of the steel bars at the head of the bedstead and worked his arm progressively further along it. Within a month postoperatively there were only stiffness and weakness, without any real limitation compared with the other side. Within six weeks all the stiffness had disappeared, and, except for definite weakness, the arm was quite normal. The weakness was especially marked when he held the arm out in front of him, particularly when he elevated it above the shoulder.

Four days postoperatively, with the aid of a toe hold on the foot of the bedstead, he was able to sit up unassisted, but he didn't feel quite well until ten days postoperatively.

Six weeks postoperatively the collapse as shown on the x-ray film appeared to be excellent and it was decided that one stage of four ribs was all that he needed. The following week he returned home (and with the aid of a diary began to write a few notes regarding the operation).

One day he dropped his pencil under the bed and in an effort to regain it had to get down on his knees and reach forward, upward and outward so that the scapula on the operated side was rotated far forward and elevated. He retrieved the pencil all right but the angle of the scapula somehow climbed over the fifth rib, and on its way back nestled inside the rib leaving him in little pain but greatly embarrassed. Slowly, he manipulated the scapula back into place. The scapula hasn't locked since, but when the hunches his shoulder far upward and forward he can still feel a bumping of the angle of the scapula as it goes over the fifth rib.

Before the right pectoral muscles had regained much tone he could place his fingers in the depression left by the excised ribs and feel the muscles on the pleural side of the scapula, and could push the scapula backwards. Now, six months after the operation, this can no longer be done.

As long as four months postoperatively, the patient could still feel very occasionally a vague pinching in the region of the scar and thought perhaps it was due to regeneration of the nerves.

Your chronicler hopes to continue to observe the result of this operation, and report more fully on its outcome after sufficient time has elapsed to properly evaluate its benefits and shortcomings.

Tuberculosis—An Intimate Chronicle by John A. O'Hale, Amer. Rev. of Tuber., Nov., 1940.

Modern treatment of epidemic influenza must still concern itself with symptoms rather than causes, *The Journal of the A. M. A.* for January 18, declares in answer to an inquiry.

President's Page

On this page in January we briefly discussed voluntary insurance for medical and surgical care. Many letters have since been received on the subject. These letters have caused me to believe that many members would like to see the Association enter this field.

Since the New Year, our Medical Service Committee has started work on a definite voluntary insurance project for the later consideration of the Association's membership. The Council has given the "go" signal to the committee on this work. As president of your Association, it is not my intention to promote voluntary prepayment insurance, but I do want to see that every Association member has the opportunity to express himself on this important subject. Towards this end I expect to devote the greater part of this president's page for the next few months. In our consideration of voluntary medical and surgical insurance let us not confuse ourselves with the intricate, technical details which every plan involves. It is hardly worth our while at this time to discuss salary limitations or collection methods until we have first decided whether or not we want an insurance plan for West Virginia. If we decide we do want voluntary insurance, we can then turn many of the technical details over to the experts.

Whether we adopt some plan of medical and surgical insurance, or whether we promote some other major project of your selection, we must become better organized in our component societies. The executive office of our State Association is an effective unit, but like many other organizations, we are too highly organized from the top down. This year we are going to make every effort to become better organized from the bottom up. Our Conference of County Society Presidents and Secretaries on January 18 was a distinct step towards better county organization, which we must have to accomplish good results.

Again, may I ask for suggestions, criticisms and advice from our Association membership.

Robt. C. Bufford

President.

West Virginia Medical Journal

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VOLUNTARY SICKNESS INSURANCE

Interest in a voluntary medical and surgical insurance plan for West Virginia is rapidly gaining impetus. On January 4 the Association's Medical Service Committee met in Charleston and created a sub-committee to draw up a definite project for the later consideration of Association members. On January 16 the Association Council commended the Medical Service Committee and urged that its work be continued. It now appears that some definite insurance plan will be submitted to the Association for consideration at the May meeting.

Added impetus in medical and surgical insurance was created on January 18 when Mr. W. J. Burns, executive secretary of the Michigan State Medical Association, conducted a roundtable discussion on Michigan's Medical Insurance plan before the Conference of County Society Presidents and Secretaries at Charleston. Mr. Burns stated that the Michigan society spent approximately $25,000 over a period of 10 years in a comprehensive study of insurance possibilities before finally launching their present statewide plan.

The experience of Michigan is of the utmost interest here because it is the only state that has a statewide plan of medical and surgical insurance sponsored and controlled by organized medicine. Two types of protection are offered under Michigan Medical Service; (1) medical service in the home, office and hospital, and (2) surgical service in the hospital. It is interesting to note that few subscribers in Michigan avail themselves of the first type of coverage. Out of a total enrollment of 117,550 on January 1, 1941, only 4,956 carried the medical service benefits while 112,594 carried the surgical service benefits.

While we are interested in the details of the Michigan plan, we feel that the first question to be decided by the Association membership is a simple "yes" or "no" on the insurance question. If we do not want voluntary insurance in West Virginia, there is not much point in arguing which type of insurance we do not want. We hope the Medical Service Committee will submit this fundamental question to the Association, properly safeguarded by a few basic principles, before the membership is asked what type of medical and surgical insurance it may or may not want.

HOSPITAL LICENSE LAW

A bill providing for the regulation and licensure of West Virginia hospitals by the Public Health Council will be introduced in the legislature about February first. The measure is being sponsored by the Hospital Association of West Virginia. Its provisions have already been endorsed and approved by the Hospital Association, by the West Virginia State Medical Association and by the Public Health Council.

The need for some form of hospital licensure has long been recognized in West Virginia and we commend the Hospital Association for taking the lead in the sponsorship of the proposed measure. At present there are laws in West Virginia regulating barber shops, restaurants, grocery stores, dairy barns, movie houses and beauty parlors, but there has never been any measure of public protection in the hospital field. Under our present laws, a crossroads midwife or an Indian herb doctor can move in a few beds over a butcher shop, call the place a hospital and keep entirely within the law.

The proposed measure classifies hospitals according to size and equipment and also makes provision for maternity homes and convalescent homes. It provides that no person may open any hospital or kindred institution until the institution has been inspected and a license granted by the Public Health Council. Annual license fees ranging from $5 to $15, according to hospital size, are provided in the proposed statute. The bill also carries an appropriation of $5,000 per annum for the administration of the act.

If enacted, the hospital licensing bill will not affect any reputable, recognized hospital in West Virginia. It will, however, make it difficult for second rate institutions to continue long in existence. The bill should contribute materially to a general improvement of hospital conditions in West Virginia. Interested doctors can assist in the passage of this bill by writing letters (not telegrams) to their representatives in the legislature pointing out the need for this type of legislation.

ASSOCIATION HISTORY

The history of the Association's past presidents, which was started several years ago by the Woman's Auxiliary, is nearing completion. Mrs. Ralph Hogshead of Montgomery is in charge of this work and great progress has been made under her capable direction. Plans are being discussed now to publish a souvenir historical booklet on the Association and past presidents in 1942, commemorating the seventy-fifth anniversary of the Association's founding.

With the exception of two dates, the biographical sketches of the past presidents are all complete. Mrs. Hogshead has informed the JOURNAL that she is still trying to find the date of the death of Dr. C. Shriver who practiced for many years in Bethany, and the date of the death of Dr. Benjamin W. Allen, who first practiced at Kingwood and later moved to Wheeling. Mrs. Hogshead will be most grateful to any doctor who can help her out on these two dates.

In addition to the dates above mentioned, an even dozen pictures are still lacking. Mrs. Hogshead is on the lookout for photographs of the following past presidents:

Dr. J. W. Ramsey	1870
Dr. J. M. Lazzell	1872
Dr. S. W. Hall	1874
Dr. Mathew Campbell	1875
Dr. W. F. Van Kirk	1881
Dr. B. W. Allen	1883
Dr. A. Gerstell	1884
Dr. S. H. Austin	1890
Dr. C. Shriver	1892
Dr. A. H. Thayer	1901
Dr. G. A. Aschman	1902
Dr. J. E. Rader	1917

SENATOR WAGNER AGAIN

Early in January, Senator Robert F. Wagner of New York gave out a statement to the Associated Press in which he said that he and others would sponsor a comprehensive proposal for an expanded national health program in line with President Roosevelt's call for widened opportunities for adequate medical care. A few days later the Association received a bulletin from the American Medical Association indicating that Senator Wagner's plan will provide for federal and state cooperation in a broad program calculated to cost $98,000,000 in the first year.

It was pointed out in the Associated Press item that Mr. Wagner had conferred with the president before the president's message to Congress was delivered on January 6, and had said that it is likely that an expansion of health facilities can be worked out in connection with the defense program. The general health program as tentatively outlined will call for cooperation between federal and state governments in construction of hospitals, payment of compensation for disability wage losses and expansion of maternal, infant, child health and welfare service, general public health services and general medical care.

The sum of $35,000,000 is mentioned as the amount to be available during the first year for the operation of approved state plans for medical care. Appropriations of $10,000,000 in federal grants for temporary disability compensation, $8,000,000 for hospital construction, $13,000,000 for medical services to children, $15,000,000 for general public health work and $8,000,000 for maternal and child health service are to be authorized, and smaller amounts are to be set aside for administration and for investigations.

Copies of Senator Wagner's bill had not yet been received at press time. A complete analysis of the bill will be made and published in the *Journal of the American Medical Association* just as soon as copies are available. In making this analysis the A. M. A. might call attention to the fact that this proposed type of bureaucratic medicine originated in Germany, the country of Senator Wagner's birth.

Contaminated Ponds

The danger of bathing in ponds that may be polluted by rats is pointed out by W. Paul Havens, M. D., Carl J. Bucher, M. D., and Hobart A. Reimann, M. D., Philadelphia, in *The Journal of the American Medical Association* for January 25 in a report of seven young men who contracted an acute infectious disease while bathing in the dammed up waters of a stream which probably had been contaminated by rats infected with the organism of Weil's disease.

While the severe, easily recognized form of the disease occurs infrequently, the authors suggest that mild cases which go undiagnosed are probably numerous. Without laboratory tests to prove the presence of the organism, the mild forms may be mistaken for other diseases, especially influenza, since an acute onset with chills, fever, headache, bloodshot eyes and painful limbs is common.

In five of the author's patients the disease was mild; it was severe in two, one of whom died. Studies in the two severe cases by isolating the causative organism proved the diagnosis of Weil's disease to be correct. Such studies were not carried out in the mild cases, but all the evidence pointed to such a diagnosis, the authors say.

Obituaries

Doctor R. A. Salton

Dr. Russell Arthur Salton, prominent Williamson surgeon, died of pulmonary embolism in the Williamson Memorial Hospital on the morning of January 20, 1941, at the age of 53 years. Although not in robust health, Dr. Salton did not become seriously ill until 24 hours before his death. In recent years he had survived two similar attacks.

Dr. Salton was born at Hamden, New York, on August 12, 1887. After receiving his preliminary education there, he graduated in medicine from the Baltimore Medical College in 1911. He then served an interneship at the Welch Emergency Hospital and later located at Big Sandy in McDowell county. He moved to Williamson in 1914 and soon formed a partnership with Dr. G. T. Conley. Together they operated a hospital from 1920 to 1927, after which they built the present Williamson Memorial Hospital on College hill.

During the World War Dr. Salton served as a lieutenant in the Medical Corps, later being promoted to a captaincy. He was a Fellow of the American College of Surgeons. His hobby was hunting and raising bird dogs. He was a member of the Masonic orders and the Elks lodge. He is survived by his widow and two children, Miss Virginia Salton, technician at the Williamson Hospital and Russell A. Salton, Jr., a student at the University of Virginia.

Doctor Fleming Howell

Dr. Fleming Howell, oldest living past president of the West Virginia State Medical Association, died in a Clarksburg hospital, on the morning of January 9, 1941, at the age of 91 years. He had been in declining health for the past three years and was a patient in the hospital for several months prior to his death.

Fleming Howell was born at Ridgedale, Monongalia County, Virginia, now West Virginia, May 3, 1849. He was educated at Rector College, Pruntytown, and at the University of West Virginia, at Morgantown. He studied medicine with Dr. Hugh W. Brock, of Morgantown, one of the foremost physicians and surgeons of the state, and afterwards, for two years was associated with him and his brother, Dr. Luther S. Brock, in the practice of medicine and surgery.

He attended medical lectures at Jefferson Medical College, Philadelphia, and at Long Island Hos-

pital Medical College, Brooklyn, and graduated from the latter in 1879. In 1880 he located in Clarksburg.

In 1891 he married Miss Gertrude Bennett of Weston, W. Va. In 1895 he administered diphtheria antitoxin on July 28. This was the first employment of it in West Virginia, and almost in the country. At the time of Dr. Howell's case the serum was unobtainable in the United States, but he had just previously secured a small supply from Berlin. In 1896 he became president of the Harrison County Medical Society. From 1904 to 1907 he worked on the theory that sunshine kills bacteria. His paper, "Sunshine and Bacteria", published in 1907 in the WEST VIRGINIA MEDICAL JOURNAL, was the first scientific explanation of this subject published in the United States.

In 1908, Dr. Howell was president of the West Virginia State Medical Association and presided at the annual meeting in Clarksburg that year. He retired from active practice in 1912 and devoted his remaining years to literature. In 1935 the Meador Press, Boston, published his book, "Our Aryan Ancestors", a brief but inclusive survey of the Aryan race from its origin as a small clan in Central Asia. He also contributed largely to medical literature during the last quarter century.

Doctor Oliver H. Griffith

Dr. Oliver H. Griffith, prominent Wheeling physician, died suddenly in his office on January 15, 1941, at the age of 53 years. A native of Ohio, Dr. Griffith graduated in medicine from Ohio Miami Medical College in 1910. Following one year's interneship at Christ Hospital, Cincinnati, he received his West Virginia license and located in Parkersburg, later moving to Wheeling.

The deceased served as a captain in the Medical Corps in the World War and was a major in the Reserve Corps at the time of his death. He was a member of the Ohio County Medical Society for more than 25 years.

Doctor Joseph A. Wood

Dr. Joseph A. Wood, Kanawha county physician and president of the Amigo Coal Company, died at the Laird Memorial Hospital, Montgomery, on January 9 at the age of 83 years. He was a resident and former mayor of Pratt. Dr. Wood graduated from the Cincinnati Eclectic College in 1882. He retired from practice several years ago.

General News

County Officers Conference

The annual Conference of County Society Secretaries and Presidents of the West Virginia State Medical Association was held at the Daniel Boone Hotel, Charleston, on Saturday, January 18, 1941. The meeting was called to order at 10:00 a. m. and Dr. George W. Easley of Williamson was elected conference chairman. The program was one of the best in the history of the conference.

The address of welcome was delivered by Dr. P. A. Tuckwiller, president-elect of the Kanawha Medical Society, following which Dr. Robert K. Buford, president of the West Virginia State Medical Association, outlined his organization plans for 1941. Major L. R. Lambert, M. D., state medical officer for selective service, spoke on "The Doctor and Preparedness." The morning session was concluded with an outstanding talk on "Industry and Health" by Dr. C. M. Peterson, director, Bureau of Industrial Health of the A. M. A., Chicago.

Following luncheon at the Daniel Boone Hotel, the afternoon program was opened by Dr. Ward Wylie of Mullens, a member of the state senate, who gave a very practical talk on medical legislation. Discussion was led by Dr. Thomas W. Nale of the State Health Department.

Mr. William J. Burns, executive secretary of the Michigan State Medical Association, Lansing, gave one of the outstanding talks of the conference on "Michigan's Voluntary Medical Insurance Plan." Discussion was opened by Mr. Robert Marsh of Huntington and this was followed by a roundtable discussion led by Mr. Burns, on voluntary sickness insurance.

The conference was concluded with an address on "Medical Organization and Public Affairs" by Dr. Russel Kessel, president, Kanawha Medical Society, of Charleston.

The presidents and secretaries and their wives were guests of the Association and the Kanawha Medical Society at the annual cocktail party and dinner dance of the Kanawha Medical Society that evening.

Those who registered for the conference were: Drs. R. K. Buford, Charleston; N. H. Dyer, Bartley; J. A. Newcome, and E. A. Courrier, Keyser; G. W. Easley, Williamson; W. P. Hamilton, Logan; P. A. Tuckwiller, Charleston; B. F.

Matheny, Hundred; A. B. Bowyer, Elkview; Richard V. Lynch, and L. E. Neal, Clarksburg; J. M. Cofer, Bergoo; John P. Helmick, Fairmont; E. N. DuPuy, and Clark Kessel, Beckley; George Lyon, and Cole D. Genge, Huntington; H. M. Andrew, Weston; Herbert Duncan, Lewisburg; A. C. Woofter, Parkersburg; J. J. Brandabur, Huntington; E. Bennette Henson, Henry M. Brown, and Russel Kessel of Charleston; George Fordham, Powellton; H. H. Howell, Madison; Guy H. Michael, Belington; Ward Wylie, Mullens; Major L. R. Lambert, Charleston; C. M. Peterson, Chicago; J. W. Crosson, Charleston; Mr. William J. Burns, Lansing, Michigan; Dr. Thomas W. Nale, Charleston; Mr. James W. Harris, Jr., Charleston, of the Department of Public Assistance, and Mr. Joe W. Savage, executive secretary of the West Virginia State Medical Association.

Representatives of the various hospital insurance plans of West Virginia, were present at the conference, as follows: Messrs. W. A. McCue, and James L. Foster of Bluefield; R. A. Thetford, Williamson; Harold Rodeheaver, Clarksburg; E. H. Ballard, Morgantown; John Hart, Charleston; Robert J. Marsh, Huntington; R. A. Wayland, Parkersburg, and L. Mason Brooks, Fairmont.

Council Minutes

The Council of the West Virginia State Medical Association met in the Association headquarters in the Public Library Building, Charleston, at 10:30 o'clock a. m. on January 16, 1941. Councillors present were Dr. Frank V. Langfitt, chairman; Dr. R. K. Buford, Association president, and Doctors A. E. Amick, J. L. Wade, Raymond Sloan, Frank Holroyd, George W. Easley, J. B. Clinton, H. L. Goodman and C. O. Post. Others present were Dr. R. J. Wilkinson, Huntington, and Mr. Joe W. Savage, executive secretary.

The minutes of the previous meeting were read and approved.

Dr. J. C. Hutchinson, Welch, was elected a member of the JOURNAL Publication Committee to fill out the unexpired term of Dr. Fred R. Whittlesey.

The Council voted approval of the principles of the proposed hospital licensing law, already endorsed by the Public Health Council, contingent on the approval of the Hospital Association of West Virginia.

Mr. Savage was instructed to get an estimate of the cost of publishing a souvenir historical booklet on the Association and its past presidents in honor of the seventy-fifth anniversary of the Association in 1942. It was reported that the Woman's Auxiliary had almost completed its history of the past presidents.

The Council voted to move the Association headquarters from the Public Library Building to the Atlas Building, 1031 Quarrier Street, Charleston.

An advertising exchange was approved between the WEST VIRGINIA MEDICAL JOURNAL and the *West Virginia Review*.

Dr. Wade presented the following resolution:

WHEREAS, There has developed in recent years a marked public demand for some type of prepayment insurance protection against the costs of illness; particularly those costs incident to hospitalization, and

WHEREAS, Statistics and figures are now available to indicate that medical, surgical and hospital insurance plans can be successfully operated on a non-profit basis, and

WHEREAS, Compulsory governmental sickness insurance has resulted in a deterioration of medical practice in every country where it has been attempted and is in opposition to the American theory of "free choice" of physician.

Now, Therefore, Be It Resolved, That the Council of the West Virginia State Medical Association hereby commends the Association's Medical Service Committee for its initial step in attempting to work out a plan of voluntary insurance for West Virginia, and

Be It Further Resolved, That we urge the Medical Service Committee to continue its study of voluntary prepayment insurance and, if feasible, to present a definite plan of voluntary prepayment medical and surgical insurance to the Association's House of Delegates at the next annual session.

The resolution, after discussion, was adopted.

Following remarks by Dr. Wilkinson, it was moved and carried that the president be authorized to appoint a committee to make a special study and report on medical education in West Virginia and that an appropriation not to exceed $500 be set aside for the expenses of the committee.

The Council voted to confer honorary life membership on Dr. A. W. Crews of Huntington, Dr. L. W. Cobun of Morgantown and Dr. E. T. Cecil of Rainelle.

It was moved and carried that the salary of Miss Clarkson be increased from $115 per month to $125 per month, retroactive to the close of the last meeting on August 1, 1940.

Dr. Buford announced the personnel of the special committee to study the problem of medical education in West Virginia as follows: Dr. R. J. Wilkinson, Huntington, chairman; Dr. E. J. Van Liere, dean, School of Medicine, West Virginia University; Dr. Frank V. Langfitt, Council chairman; Dr. Roy Bird Cook, Charleston, representing the druggists and Dr. N. H. Baker, Charleston, representing the dental profession.

Dr. Buford also discussed the legislative setup in West Virginia and urged the support of the councillors for the Committee on Legislation, headed by Senator Ward Wylie, M. D. He further urged the councillors to serve as organizers and advisers in their councillor districts and to visit the societies in their districts at least once each year.

JOE W. SAVAGE, *Executive Secretary.*

Surgical Congress

The Southeastern Surgical Congress will hold its twelfth annual Postgraduate Surgical Assembly at the John Marshall Hotel, Richmond, Virginia, March 10, 11, 12, 1941. The list of speakers includes Drs. Irwin Abell, Willis C. Campbell, Frank H. Lahey, Fred W. Rankin, Greshom J. Thompson, Gabriel Tucker, Charles F. Geschickter, Temple S. Fay and Alfred I. Folsom.

More on "Dr." Strauss

Information continues to seep in about "Doctor" S. S. Strauss, who at last report was still in jail in Kingwood awaiting action of the federal authorities. Strauss is being held as a draft evader and the F. B. I. is investigating his past record. Strauss was exposed as a fake doctor in the October issue of the WEST VIRGINIA MEDICAL JOURNAL and his arrest followed.

Last fall a man who seemed to be the same appeared in a Pennsylvania town calling himself Charles F. Straub. A physician of whom he asked help in finding a position referred him to an opening in West Virginia. At this time the applicant said he had graduated from Tulane University of Louisiana School of Medicine, had served an interneship in Charity Hospital, New Orleans, had training in pediatrics at Charity Hospital and at the Mayo Clinic. Tulane and the Mayo Clinic reported they had no record of Charles F. Straub.

When the state police took Strauss in custody in Kingwood as a suspicious character they discovered that while his automobile license was in the name of Samuel Strauss, his draft registration card bore the name Kreiger. The police notified the U. S. Department of Justice, which sent back a police record dating from 1933. Names used by Strauss included Seymour, Rothchild, Fenberg, Liebowitz and Samuel Semour Strauss. His activities have been carried on in California, Pennsylvania, Virginia, Ohio, Missouri and New York, as well as West Virginia. They are said to include sentences in various penal institutions for using the mails to defraud and one for vagrancy.

Strauss at Kingwood is being held for the next meeting of the federal grand jury on a charge of registering for the draft under an assumed name.

Harofe Haivri

The attention of the medical profession is directed to the appearance of a special issue of *Harofe Haivri* (The Hebrew Medical Journal), a semi-annual publication, edited by Dr. Moses Einhorn. This volume commemorates the thirteenth anniversary of this journal and is dedicated to Prof. Sigmund Freud.

The contents of this journal are not confined to technical medical topics, but are divided into several sections covering a variety of related subjects, such as "Medicine in the Bible and Talmud", "Old Hebrew Medical Manuscripts", "Palestine and Health", etc. Among the contributors to the medical and editorial sections, have been such prominent physicians as I. S. Wechsler, A. Rongy, S. Solis-Cohen, B. Crohn, R. L. Kahn, J. Bullowa, D. Macht, etc.

In the section on Sigmund Freud, Dr. A. A. Brill presents a masterful exposition of "Freud's Metapsychology", and Dr. Philip Lehrman recounts much biographical detail and the story of Freud's earliest researches.

Another section of *Harofe Haivri* presents from time to time medieval medical treatises, heretofore unpublished and interesting both from a historic and scientific viewpoint. In this volume a manuscript entitled "Hygiene of the Body" is included; it is written in verse by the famous Yehuda al-Charisi, who lived in Spain during the twelfth century. In addition to an English-Hebrew medical dictionary, the original articles are summarized in English, to make them available to those who are unable to read Hebrew.

Van Meter Prize Award

The American Association for the Study of Goiter again offers the Van Meter Prize Award of three hundred dollars and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The award will be made at the annual meeting of the Association which will be held at Boston, May 26, 27 and 28, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigation; should not exceed three thousand words in length; must be presented in English, and a typewritten double-spaced copy sent to the corresponding secretary, Dr. W. Blair Mosser, 133 Biddle Street, Kane, Pennsylvania not later than April 1.

A place will be reserved on the program of the annual meeting for presentation of the prize award essay by the author if it is possible for him to attend. The essay will be published in the annual proceedings of the association. This will not prevent its further publication, however, in any journal selected by the author.

Remedies by Drug Clerks

The dangers of self treatment again are emphasized by *The Journal of the American Medical Association* for January 4, which in an editorial points out:

"Many Americans with little regard for health will take any kind of unauthoritative advice on the proper treatment of disease. Poorly educated cultists, radio announcers reading advertising scripts and careless or unethical pharmacists do not hesitate to prescribe for disease conditions. For years some manufacturers of medicinal products have persistently used such agencies in the promotion of their products.

"This journal has repeatedly condemned practices which tend to promote counter prescribing by the druggist. Again and again *The Journal* has pointed out the dangers inherent in self medication. Several years ago an investigator, feeling that he was coming down with a cold, visited seven different drug stores in Chicago and asked for remedies for his cold. With one exception, he obtained in each drug store three items. None of these remedies duplicated others. Some might have given temporary relief; others were prescriptions which were apparently pet hobbies of the druggists 'consulted.'"

County Society News

Barbour-Randolph-Tucker

The regular meeting of the Barbour-Randolph-Tucker County Medical Society was held in the Imperial Hotel at Thomas on the evening of December 12, 1940. The guest speakers of the evening were Dr. J. R. Brown and Dr. H. E. Beard of Huntington. Dr. Brown gave a very interesting talk on "Carcinoma of the Rectum", illustrating his talk with motion pictures to demonstrate his technique. Dr. Beard presented an excellent paper on "Menstrual Disorders."

The election was held and Dr. L. U. Lumpkin of Elkins was elected president to succeed Dr. Hu C. Myers of Philippi. Dr. L. S. King of Philippi and Dr. J. M. Brand of Coketon were elected vice presidents. Dr. H. H. Bolton of Thomas, Dr. Franklin B. Murphy and Dr. W. G. Harper were elected to the board of censors, and Dr. Guy H. Michael was reelected as secretary-treasurer.

Dr. Joseph C. Wood was elected to membership. The application of Dr. Anthony J. DiCello of Elkins was referred to the board of censors.

A vote of thanks was given to the retiring officers with an expression from the membership that the scientific programs for the past year were perhaps the best the society has been favored with for many years. GUY H. MICHAEL, *Secretary*.

Boone County

Dr. A. E. Glover of Madison was elected president of the Boone County Medical Society at the December 19 meeting in the office of Dr. R. L. Hunter, county health officer. Dr. Glover succeeds Dr. Ray I. Frame of Sharples. Other officers elected were Dr. D. E. Lewis, Nellis, vice president and Dr. H. H. Howell, Madison, secretary-treasurer. R. L. HUNTER, *Secretary*.

Cabell County

The regular monthly meeting of the Cabell County Medical Society was held on the evening of January 9 at the Pritchard Hotel, Huntington, with Dr. George Crile, Jr., of Cleveland, as the guest speaker. He gave a highly interesting presentation on "Diagnosis and Treatment of Diseases of the Thyroid."

A buffet supper was served following the scientific program.

COLE GENGE, *Secretary*.

Central West Virginia

The January meeting of the Central West Virginia Medical Society was held at the Methodist church, Gassaway, on the evening of January 15. The attendance was small, due to the influenze epidemic. In the absence of the president, the meeting was presided over by Dr. Bowyer, secretary.

The scientific program consisted of a paper with lantern slide illustrations by Dr. John McCuskey of Clarksburg on the subject, "Differential Diagnosis Between Gastrointestinal and Genitourinary Lesions." The paper was very interesting and instructive and there was considerable discussion of various topics brought out. It was requested that the manuscript be submitted to the WEST VIRGINIA MEDICAL JOURNAL for publication.

The next meeting will be held at Richwood in April. The committee on arrangements will be Dr. J. E. Echols, Dr. William Nelson and Dr. George Hill.

A. B. BOWYER, *Secretary*.

Greenbrier Valley

Dr. Herbert Duncan of Lewisburg was elected president of the Greenbrier Valley Medical Society at its meeting on Wednesday, January 8. He succeeds Dr. Guy Hinsdale of White Sulphur Springs.

Other officers elected at the January 8 meeting were Dr. E. W. McCauley, Rainelle, vice president, and Dr. A. G. Lanham, reelected secretary-treasurer. Delegates to the state meeting will be Dr. Duncan and Dr. Lanham.

A. G. LANHAM, *Secretary*.

Harrison County

Dr. Richard V. Lynch of Meadowbrook was elected president of the Harrison County Medical Society at the annual meeting in December to succeed Dr. George F. Evans of Clarksburg. Dr. J. T. Brennan, Clarksburg, was elected vice president; Dr. R. T. Humphries, Clarksburg, treasurer, and Dr. L. E. Neal, Clarksburg, secretary.

Delegates elected to the state meeting in Charleston in May were Dr. George Evans and Dr. H. H. Haynes, Clarksburg. Alternates, Dr. J. F. Williams, Dr. Humphries and Dr. B. S. Brake, all of Clarksburg.

L. E. NEAL, *Secretary*.

Kanawha County

The annual installation banquet of the Kanawha Medical Society was held at the Daniel Boone Hotel, Charleston, on the evening of January 18. There was a good attendance and informal talks were made by Dr. P. A. Tuckwiller, incoming president, and Mr. W. J. Burns, executive secretary of the Michigan State Medical Association. Dr. Russel Kessel, retiring president, presided.

County society presidents and secretaries in attendance at the annual conference in Charleston on January 18 were guests of the society at this function. Dancing until one o'clock followed the installation dinner.

W. A. THORNHILL, JR., *Secretary*.

Logan County

The Logan County Medical Society held its regular meeting at the Aracoma Hotel, Logan, on the evening of January 8. Dr. Henry Baum of Charleston was the speaker. He gave a very interesting talk on "Menstrual Disorders." Dr. Baum was accompanied by Dr. A. C. Chandler, also of Charleston. The attendance was not of the best, due to the increase in the number of influenza cases.

W. P. HAMILTON, *Secretary*.

Marion County

New officers of the Marion County Society for 1941 were elected at the January meeting. Dr. Kyle Y. Swisher of Fairview was elected president, succeeding Dr. J. M. Trach of Fairmont. Dr. Philip Johnson was elected vice president, Dr. James L. Blanton, treasurer, and Dr. John P. Helmick, reelected secretary.

Dr. George Traugh was elected for the two year term as delegate to the state meeting in Charleston in May, with Dr. Joe Yost as alternate.

JOHN P. HELMICK, *Secretary*.

Mercer County

The Mercer County Medical Society held its annual banquet and election of officers the evening of December 19 in the West Virginian Hotel, Bluefield. There was an excellent attendance and Reverend Frank Stuck of Princeton gave a very interesting talk on "The Relationship of the Physician and the Preacher." There were also several musical numbers.

Dr. L. J. Pace, Princeton, was elected president of the society to succeed Dr. O. G. King, Bluefield. Dr. J. R. Shanklin was elected vice president, Dr. Frank J. Holroyd, secretary, and Dr. H. G. Steele, treasurer. Dr. B. S. Clements was elected delegate

to the state meeting with Dr. King as alternate. Dr. R. R. Stuart was elected to the board of censors.

A dance followed the election and business meeting.

FRANK J. HOLROYD, *Secretary.*

Monongalia County

The regular monthly meeting of the Monongalia Medical Society was held at the Hotel Morgan on the evening of January 7 with a good attendance. Dinner was served, following which the scientific program was presented. The guest speaker was Dr. W. W. Point of Charleston who gave a very interesting talk on "Care of the Perineum During Delivery."

C. T. THOMPSON, *Secretary.*

Ohio County

At the regular meeting of the Ohio County Medical Society held January 10, 1941, at the Ohio Valley General Hospital, the speaker was Dr. F. P. Coller, Professor of Surgery at the University of Michigan. He gave a very helpful and instructive lecture on "Postoperative Complications."

Dr. Robert M. Sonneborn was accepted to membership in the society, transferring from the Preston County Society.

Dr. Charles L. Scudder of Boston was the speaker at the December meeting and gave a very interesting and instructive talk on "Emergency Treatment of Fractures" and "The Nucleus Pulposus as the Cause of Backache."

The society voted to adopt similar action to that of the State Association in complimenting the membership of members during active military service.

HAROLD G. LITTLE, *Secretary.*

Parkersburg Academy

The regular meeting of the Academy of Medicine of Parkersburg was held at the Camden-Clark Hospital on the evening of December 4 with Dr. James L. Wade, president, presiding. The program was a symposium on head injuries presented by the house staff of the hospital. Dr. S. W. Goff presented the anatomy and physiology, Dr. J. H. Shanklin spoke on diagnosis and Dr. C. P. Artz presented treatment.

Dr. Welch England was elected president of the academy for 1941, with Dr. A. R. Lutz, vice president, and Dr. A. C. Woofter, secretary-treasurer. Dr. R. H. Wharton and Dr. A. M. Dearman were elected new members of the board of directors of Hospital Service.

A. C. WOOFTER, *Secretary.*

Preston County

The annual election of officers of the Preston County Medical Society was held at the January 15 meeting at Kingwood and Dr. J. F. Lehman of Kingwood was named as president, succeeding Dr. Blanche B. Miller of Eglon, who served during 1940. Dr. H. C. Miller of Eglon was selected as vice president and Dr. C. Y. Moser, Kingwood, was reelected secretary-treasurer. Dr. Miller and Dr. C. E. Smith of Terra Alta were elected delegates to the state meeting with Dr. David Sauer, Kingwood, and Dr. R. C. Edwon, Hopemont, as alternates.

The society voted to confer complimentary membership for 1941 on all present members in active military service. Dr. David Sauer, Kingwood, and Dr. T. S. McIntyre, Rowlesburg, were approved by the board of censors for membership. The society reported a 100 per cent complete job on the return of the A. M. A. medical preparedness questionnaires.

C. Y. MOSER, *Secretary.*

Raleigh County

The Raleigh County Medical Society held its regular monthly meeting in Leslie's Diner, Beckley, on the evening of January 16. The guest speaker was Dr. John C. Dumler of Baltimore who gave a very interesting discussion on "Dysmenorrhea."

There were thirty-three members and guests present.

CLARK KESSEL, *Secretary.*

Wetzel County

Dr. B. F. Matheny of Hundred was elected president of the Wetzel County Medical Society at the January meeting, succeeding Dr. E. C. Blum of New Martinsville. Dr. R. F. Miller of Paden City was elected secretary-treasurer, succeeding Dr. K. M. Hornbrook.

Delegates elected to the 1941 meeting in Charleston in May were Dr. F. E. Martin and Dr. Matheny, with Dr. Blum and Dr. J. O. Theiss as alternates.

K. M. HORNBROOK, *Secretary.*

BOOK REVIEWS

Foreign Bodies in Abdomen

FOREIGN BODIES LEFT IN THE ABDOMEN. The Surgical Problems, Cases, Treatment and Prevention; The Legal Problems, Cases, and Decisions by H. S. Crossen, M. D., School of Medicine, Washington University and D. F. Crossen, LL.B., School of Law, Washington University, St. Louis, Mo. Cloth. Pp. 762, with 212 illustrations including four color plates. St. Louis. C. V. Mosby Company, 1940.

This work was undertaken to emphasize to surgeons the danger of occurrence of the serious accident of leaving a foreign body in the abdominal cavity, to work out the best plan of treatment for the various types of such cases, to call attention to the difficulties of avoiding such accident under the many stresses of abdominal work and to arouse interest in the serious study of the problem of prevention. In addition, the work deals with the subject of foreign bodies left in the abdomen from the legal standpoint.

The senior author, in his usual lucid style, reviews the literature with detailed case histories and then devotes special chapter to the diagnosis, treatment and prevention of sponges lost in the abdomen, and later chapters to instruments, drains and other foreign bodies. A very interesting chapter deals with swallowed articles in the abdomen with special attention to differential diagnosis and the x-ray problems. Throughout this section of the work voluminous case histories, x-ray pictures and charts and illustrations illuminate the text. The junior author presents the legal phase of the problem. The discussion of the doctrine known to lawyers as "res ipsa loquitor" is especially interesting. Various court decisions are cited and discussed. Other chapters deal with theories of defense in sponge cases, statute of limitation and damages. The bibliography is especially complete and the book is adequately indexed. The losing of sponges and instruments in the abdomen is a nightmare to all surgeons. Within the covers of this book there is much consolation for the heretofore unfortunate and much warning for those who have so far been lucky. The book is recommended.

Methods of Treatment

METHODS OF TREATMENT by Logan Clendening, M. D., Philadelphia, The C. V. Mosby Company, 1941.

This is the seventh edition of this work that has appeared since 1924 and the reviewer in opening the book wondered what could cause such frequent issuance. The author states in the introduction that this book was planned to furnish an outline of all the methods of treatment in internal medicine and that the aim has been to describe each method of procedure clearly and minutely with particular regard to factual detail. The author's aim is attained in a most satisfactory manner. In fact, one peruses the book with amazement that so much can be so clearly and completely encompassed in a volume of approximately one thousand pages. For the most part, this is due to the fact that the subjects are dealt with practically and in the light of present day knowledge. For example, while many textbooks devote pages to schematic representation of classification of nephritis, the author does it in two pages. The book is so up to date as to contain sections on sulfathiazole.

The illustrations, charts and plates are numerous and well adapted to their purpose.

Clendening was assisted by Edward Harshinger and there are chapters on special subjects by selected authors.

The work is recommended as one for which any doctor, regardless of specialty, may find a worthwhile place on his shelves.

Medicolegal Ophthalmology

A TREATISE ON MEDICOLEGAL OPHTHALMOLOGY by Albert C. Snell, M. D., St. Louis, The C. V. Mosby Company, 1940.

This book deals essentially with the fundamental principles of medicolegal ophthalmology. Doctor Snell's long established reputation as a writer and teacher of ophthlamology is adequate proof of his competence to put forth such a work.

The book is divided into three sections and an appendix. The first section deals largely with the principles of law, analysis of compensation laws and the bearing of these on visual disabilities. The second section deals with the examination of the eye and the methods of determining in percentage the amount of damage sustained. The ophthalmologist will find in this section the methods used by Doctor Snell after long years of practice. Section three is entitled, "The Practical Application of Visual Efficiency Computation to Medical Legal Practice." The appendix deals with court decisions and the Longshoreman's and Harbor Workers Compensation Act to Provide Compensation for Disability in the District of Columbia. All doctors might read with interest that part of this section dealing with the use of textbooks in court.

To arrive at a fair determination of disability in accident and compensation cases is always difficult. Particularly is this true in cases involving the eye-

sight. Doctor Snell has made a contribution that can be of considerable value to those having to do with any phase of medicolegal ophthalmology.

Cancer in Childhood

CANCER IN CHILDHOOD, by Harold W. Dangeon, M. D., F. A. A. P., Philadelphia, The C. V. Mosby Company, 1940.

In the past few years the literature regarding cancer in childhood has been voluminous. The pediatric journals have published many case reports. This author has compiled nine excellent chapters that were at one time published in the *Journal of Pediatrics*. Each chapter has been written by a worker outstanding in his field.

The preface places a good deal of emphasis on cancer as one of the important childhood diseases. Ewing has written an excellent survey on cancer. The book itself contains a little over one hundred pages and is written in a style that is readable.

There is very little space devoted to figures and statistics. Each system of the body is discussed individually regarding cancer. This discussion not only includes diagnosis but treatment, anatomic varieties, pathology, end results and prognosis.

The nine pages devoted to Wilms' tumor are enlightening and well done.

This type of monograph is well worth having. It is excellent for the busy physician who has not the time nor the place to search the literature for information.

—JACK BASMAN, M. D.

Guide for the Deafened

COMPLETE GUIDE FOR THE DEAFENED and **HANDBOOK OF HEARING AIDS**, by A. F. Niemoeller, M. D., New York, Harvest House, 1940.

If you were so unfortunate as to be one of the ten million "hard-of-hearing" persons in this country and did not have available the services of an otologist, what would you do? Possibly you might decide to stay "hard-of-hearing" and put up with the economic and social handicaps resulting. Ultimately, it is quite possible that you would discover the various activities and friendships heretofore yours were being slowly but increasingly denied you. Your friends would more and more avoid the embarrassment of making themselves and you conspicuous by attempts to make themselves heard. This finally would cause a readjustment of your entire life, possibly with much pain and bitterness,

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certainly with loneliness. On the other hand, you might try to use some form of hearing aid. Competent advice being hard to get you would experiment with trumpets, electrical hearing aids, portable and unportable hearing aids, amplifiers, vacuum tubes, etc., and always unless by the happiest chance your search is apt to be disappointing.

The "Handbook of Hearing Aids" was written to help guide the "hard-of-hearing" in their choice of artificial assistance and to solve the entire problem of deafness. It is comprehensive, ethical and practical. It discusses all types of hearing aids, mentioning their good and bad points. It has three very practical chapters devoted to the costs of these apparatus. It also has a word of advice as to the necessity of training in lip reading, as well as coaching in the proper use of any chosen apparatus.

The "Complete Guide for the Deafened" is a more extensive work. While it also deals with the various kinds of hearing apparatus its main purpose is to help the deafened to make a more happy adjustment to his unfortunate handicap. Chapters are devoted to various forms of deafness, to the effect of disease producing deafness, swimming, noises, explosions, etc. Again, reeducation and lip reading are stressed. Other chapters are devoted to how to hear the radio, movies, conversation, telephone, church services, lectures, etc.

These books are written for the laity. The sympathetic medical consultant may recommend them, knowing that they may save the unfortunate patient years of agony and wasted effort as well as leading them to avoid many financial pitfalls which too often are more than they can afford.

Vision in the Schoolroom

Because of the intensive visual work done in the classroom, it is imperative that the physical arrangements of schools have provisions for safeguarding the sight of the pupils, Constance J. Foster, Great Neck, N. Y., states in *Hygeia*.

"The more exacting the eye work, as in drawing and sewing classes, the more illumination is required for seeing ease," she says. "Adjustable tilt-top desks help to bring work to the proper angle of vision. The desk should be high enough to prevent stooping. Work held 13 to 15 inches from the bridge of the nose is easiest on the eyes."

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1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph. Gon. & Ven. Dis., 23, 201 (March) 1939.

*Silver Picrate, is a definite crystalline compound of silver and picric acid. It is available in the form of crystals and soluble trituration for the preparation of solutions, suppositories, water-soluble jelly, and powder for vaginal insufflation.

COMMUNICATIONS

Fort Benning, Ga.
January 16, 1940.

Dear Mr. Savage:

I wish to express my appreciation, through you, to the State Medical Association for the kindness and thoughtfulness expressed in your letter of January seventh. The message has been of considerable help in trying to dispel that feeling of emptiness and uselessness which most of us have had. I am beginning to believe now that there probably are some professional brothers who care that we have given up our practice and ties at home.

For those interested in medicine, the work here has not been interesting. A great number of us have been assigned to medical battallion work which an ordinary army sergeant could do much better—no medical work at all. Until today I had not seen nor examined a patient since I have been here. I was fortunate, however, in being transferred to the hospital and assigned to a general medical ward. This increased my enthusiasm to a high pitch; since I believe that here I will be serving a useful purpose, and will be able to use my training where it will do the most good.

Wishing you and the Association a very successful and happy New Year, I am,

Very truly yours,

Hypertension Business

To the WEST VIRGINIA MEDICAL JOURNAL:

Some Chicago firm offers a thousand dollars for the best paper on hypertension (high blood pressure). I am a powerful good writer and I am in desperate need of a thousand dollars. More than eighteen thousand people owe me more than two hundred and forty thousand dollars, and I lack business acumen to make them pay me. Now if I can get a thousand dollars for twenty minutes writing, I had better do it. I don't get a thousand dollars in twelve months' medical practice. Now if you assign the thousand dollars to me, I will give the Salvation Army a hundred dollars to help out the poor people and the scalawags of our community.

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Now this hypertension business is no child's play; neither is it always amenable to medical treatment. I am one of the biggest bugs in the state, yet my treatment has been absolutely worthless in one case.

I had a case of tense high blood pressure but could not handle it but tried it faithfully for weeks, and called in some of the best doctors in the state, but we all failed to do her any good. We sent her to Johns Hopkins Hospital for weeks. She came back no better. We treated her further and more drastically, but she failed to respond, and died after two weeks of treatment. This was the only case that did not respond satisfactorily to treatment. This is not saying they all got well in a short time, but they all got well or held their own or were operated on for toxic goiter.

So much for preliminaries. Most cases of hypertension respond satisfactorily to common sense treatment. Push the pulse to the sixties or even into the fifties with black hellebore, and hold it there; add gelsemium to the mixture to quiet the nervous tension. Pepsin and pulsatilla may be added to the mixture. The treatment is extremely satisfactory, and cures most cases that do not require surgical intervention. The treatment should be kept up after surgical care for a few weeks. The treatment is extremely satisfactory, and it does not seem to be widely known to the medical profession.

Respectfully,

C. H. Maxwell, M. D.,
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Woman's Auxiliary

McDowell County

The Woman's Auxiliary to the McDowell County Medical Society held their December meeting on December 6 at the Appalachian Community Room, Welch. Mrs. Charles B. Chapman, president, called the meeting to order and sixteen members and one guest attended.

Mrs. Chester Harman was the guest speaker and discussed Red Cross work. The auxiliary donated $10.00 to the Red Cross and Salvation Army each and $1.00 to the Jane Todd Memorial Fund. A motion was made and carried to send *Hygeia* to the Junior Woman's Club Library.

The January meeting was held on December 8 at the Legion Building, Welch.

MRS. E. O. GATES, *Secretary.*

Parkersburg

The Woman's Auxiliary to the Academy of Medicine of Parkersburg held their regular monthly meeting December 10 at the Chancellor Hotel, Parkersburg. Mrs. H. A. Giltner called the meeting to order and there were 28 members present.

Mrs. V. E. Holcombe, national auxiliary president, made an interesting talk on the two medical magazines, "*Hygeia*" and the "*Bulletin*", publications in which the American Medical Association is particularly interested. Mrs. Holcombe also gave a resumé of the visit she made to auxiliaries on the west coast.

On January 14, 1941, the Parkersburg Auxiliary met again at the Chancellor Hotel. There were 27 members present.

Mrs. James L. Wade of Parkersburg selected the timely subject of "Medical Military Preparedness" which was very interesting and instructive.

The February meeting will be held at the Chancellor Hotel on the eleventh.

MRS. CHARLES L. GOODHAND, *Sec'y*

Raleigh County

The Woman's Auxiliary to the Raleigh County Medical Society held a luncheon meeting on December 16, at the Beckley Hotel, Beckley. Mrs. E. Newton DuPuy, president, called the meeting to order and there were 17 members in attendance.

Main Entrance

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Mrs. V. E. Holcombe, Charleston, president of the national auxiliary, gave an interesting talk on auxiliary work and told of her recent visits to state medical auxiliaries in the west.

It was decided to donate $10.00 to the Christmas Toy Fund. The committee which aided in the local Red Cross drive gave a good report of its work.

The January meeting was held on the twentieth, and the February meeting will be held in Beckley on the seventeenth.

MRS. H. A. SHAFFER, *Secretary*.

Eye During Convalescence

Amusements that are restful to the eyes are best for convalescent children, Constance J. Foster, Great Neck, N. Y., suggests in *Hygeia, The Health Magazine*.

"During convalescence from any prolonged or serious sickness," she points out, "the eyes are weak. Yet this is the time when the child is frequently given books to read."

Neighbor Journals

A Safe Safety Pin

This product, the result of the inventive genius of Dr. Woodard Colby of Saint Paul, is now being manufactured and will shortly be available for general distribution. For those who have had the opportunity to use this pin, its merits are most appealing. Its construction is simple and most ingenius. The outstanding feature is the manner in which the point is concealed, making it impossible to cause injury to infants in the ordinary use to which it is put and virtually harmless if swallowed. It is to be manufactured by the Minnesota Homecrafters, Inc., under a plan sponsored by the Minnesota Department of Education and the United States Government. The pin has received the unqualified endorsement of the Ramsey County Medical Society and the St. Louis County Medical Society and of many leading physicians, among them Dr. Bela

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Schick of New York, Dr. Walter Ramsey and Dr. H. P. Ritchie of Saint Paul and many others.

The plan of manufacture and distribution as at present undertaken is two-fold. First, it will place a much desired article on the open market and, second, it will provide gainful employment for a goodly number of handicapped individuals. That these workers are by no means unskilled is evidenced by the fact that out of seventy-five useful articles exhibited at the Minnesota State Fair last month prizes were awarded to sixty-three. At the Tri-State Fair they received prizes for twelve from a total of fifteen shown, at the Proctor Fair ten out of twelve and at the Hibbing Fair every one of eight articles exhibited received awards.—*Minnesota Medicine.*

Doctors and Investments

The day of the spirited span of horses and fine carriages has gone along with the doctor's Van-Dyke, long-tailed coat and high-top hat. Everywhere practitioners in that day seemed to think that success depended upon show. This idea still exists in the minds of some physicians of our time. Overemphasized pride now displays itself in the form of fine automobiles and expensive suites of offices. The result is that many doctors struggle along burdened by much unnecessary debt which confronts them constantly, often disturbing concentration while at work and troublesome dreams while sleeping. In such a state of confusion efficiency is diminished, resulting in poorer service.

Only a small per cent of patients, when questioned for immediate reply, can call the names of their physicians' cars. Nor do they care. Their real concern centers around treatment leading to relief and cure. A waiting room or an automobile that is not conspicuously worn and out-of-date is in good taste. Therefore, following annual streamlines of

(Continued on page xxix)

WANTED: Physician. Preferably young man who has had some experience in psychiatry or who wishes to enter this field; to associate in psychiatric work in nervous and mental private hospital. An attractive position with opportunity if he succeeds in the work. Address BXY care of this Journal.

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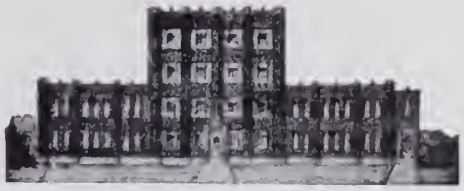

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(Continued from page xxvii)

furniture and automobiles is unnecessary. Monthly remittances to finance companies, the result of tickling our vanities, should be much less frequent, thus permitting us to spend more on equipment and study.

When financial success appears to smile faintly on some doctors it seems to arouse a desire to make investments in stocks, and in farms particularly. Experts often admit they do not know and mark time while snap-judgment amateurs crash. The old adage that "There is a sinkhole on every farm" is true, because farming is a science and, like medicine, requires a life study. Stockbrokers operate on the theory that stocks are to be sold and not bought, which brings to mind the adage, "Medicine is made to give and not to take." Efficiency in the practice of medicine is something to be proud of, but it has not also developed along with it a keen sense of business judgment.

As physicians our chief aims are to help others and ourselves. In order to be most efficient we must keep physically fit which is largely the result of practicing physiologic methods to a reasonable degree. It is important to devote some time to play along with work.

Let us reflect now in the beginning of this year and resolve to adjust our affairs so that we shall not be ruled by financial fear, for it may bring unhappiness to our loved ones, to our friends, and to ourselves.—*Georgia Medical Journal.*

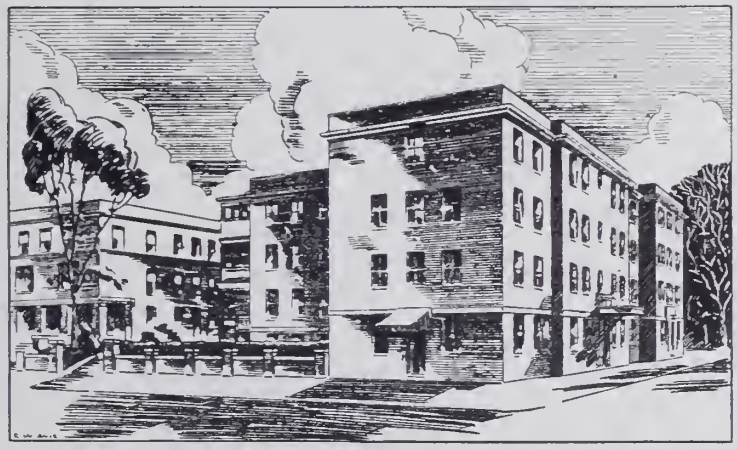
Obesity and Adrenals

The twentieth century theory of obesity has been that the putting on of flesh was purely a matter of the number of calories ingested per day; and that reduction of these invariably produced weight loss. It was noted that even frankly endocrine cases could be reduced if their calories were restricted. Studies of the vitamins and of some of the internal secretions must complicate this viewpoint and revive the struggle to find a reducing diet which is generous and satisfying.

Thorn and Emerson,[1] of Johns Hopkins University, have investigated the effects of ovarian, tes-

1. Thorn, George W., and Emerson, Kendall, Jr.: The Role of Gonadal and Adrenal Cortical Hormones in the Production of Edema. Ann. Int. Med., 14:757 (Nov.) 1940.

McMILLAN HOSPITAL Charleston, W. Va.



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ticular and adrenal hormones upon sodium chloride and water retention in the body and upon the appearance of edema. Excess of the three steroid hormones of the body, progesterone, testosterone and corticosterone, apparently, according to these authors, is capable of bringing about weight gain, with sodium chloride and water retention. Rather sudden weight gain may at times occur physiologically under the influence of excess secretion of one of these glands, or after treatment of normal or subendocrine animals or humans with their products. Desoxycorticosterone in particular has a water and sodium chloride retaining effect upon normal persons and upon patients with Addison's disease. Potassium to some extent counteracts its activity.

It has been observed that the taking of one per cent salt solution instead of water by adrenalectomized rats will maintain these animals in a state of good health and will also permit them to store carbohydrate much better than the adrenalectomized controls which do not receive salt in the water.[2] With the proper amount of excess salt, they are able to maintain their weight.

One would think, then, that perhaps salt metabolism and the tendency to salt retention would have much to do with the normal putting on of weight, and if this is so, that potassium salts might have a tendency to prevent obesity.

Certainly the mineral salts, which have no caloric value in the body, must be concerned in weight maintenance, and the quantity of circulating adrenal hormone, which may show considerable normal individual variation, must affect the hydration of tissues and the utilization and storage of foodstuffs.—*Southern Medical Journal.*

2. Anderson, E., Herring, V., and Joseph, M.: Salt After Adrenalectomy. III. Carbohydrate Stores in Adrenalectomized Rats Given Various Levels of Sodium Chloride. Proc. Soc. Exper. Biol. & Med., 45:488 (Oct.) 1940.

Medical Education

"This year special emphasis is placed on medical preparedness as it affects the training of physicians," *The Journal of the American Medical Association* for January 25 points out in announcing that the Thirty-Seventh Annual Congress on Medical Education and Licensure, under the sponsorship of the Association's Council on Medical Education and Hospitals, will be held February 17 and 18 at the Palmer House, Chicago.

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Vol. XXXVII March, 1941 No. 3

BILATERAL PNEUMOTHORAX: A REVIEW OF FIFTY-SIX CASES

By ROBERT M. SONNEBORN, M. D.*
Wheeling, West Virginia

In 1912, at the International Congress in Rome, Maurizio Ascoli first advocated bilateral artificial pneumothorax as an adjunct in the treatment of pulmonary tuberculosis. However, this conflicted with the principle of total collapse advocated by Forlanini, and was therefore not immediately accepted. Saugmann in 1921 reported only one good result in seven cases. Rist and Chabaud in 1926 reported twenty cases with six satisfactory results, and seven deaths. There followed other scattered reports, chiefly from European clinics, with indifferent results.

Only in the last ten years has bilateral pneumothorax been widely used and cases reported in any considerable number. This is especially true of the American literature which was negligible prior to 1930.

The widespread reports in recent years are evidence of the increasing use of this procedure. It is only through the analysis of these reports that we can determine its efficacy. In doing this there are many pitfalls. The susceptibility, resistance, and response to therapy is variable among the different races and will alter the results. Likewise, the extent and type of the disease will vary results. Most difficult of all, there are various nomenclatures used to express the results obtained, and as a rule these terms do not necessarily specify whether the disease is active or inactive. Results have been grouped as (1) satisfactory and unsatisfactory; (2) dead, living, working, living normal life, or on the cure; (3) successful, partial success, questionable, failure, and dead; (4) sputum negative, positive, and dead; (5) the national tuberculosis classification of cured, arrested, apparently arrested, quiescent, improved, unimproved, and dead; (6) successful bilateral result, successful unilateral re-

THE AUTHOR

Dr. Sonneborn, graduate Columbia University College of Physicians and Surgeons, 1936; interned Presbyterian Hospital, New York City, 1937-1939; resident physician Hopemont Sanitarium, Hopemont, West Virginia.

*From the Hopemont Sanitarium, Hopemont, West Virginia.

sult, and unsuccessful; (7) alive after five years, alive after two years, alive less than two years, and dead; (8) able to work, ambulant, improved, unimproved, and dead.

The criteria for each classification are different and frequently are not given. As an example, a case classified as quiescent or improved may have an open cavity and positive sputum, or a closed cavity and a negative sputum.

In this paper, results are classified as inactive, and active or dead, as in the proposed discharge classification of Salkin and Cadden. The criteria necessary to classify a case as inactive are (1) a negative sputum on repeated concentrated examinations, and cultures when indicated; (2) the absence of cavity; (3) a stable or regressive x-ray appearance; and (4) absence of constitutional symptoms.

Thus in trying to compare the reports of various authors, we have grouped their results under inactive, and active or dead. Not all the cases could be so divided, and a third group of "questionable result" has been added. The figures in Table I are not the actual results published by the author but are those modified by us so as to fall under the classification of inactive and active. All cases with a positive sputum or open cavity have been considered as active although some cases with a positive sputum may represent an active bronchitis rather than an active parenchymal lesion. Cases reported as improved or quiescent, unless sputum and cavity have been mentioned, have been classified as questionable.

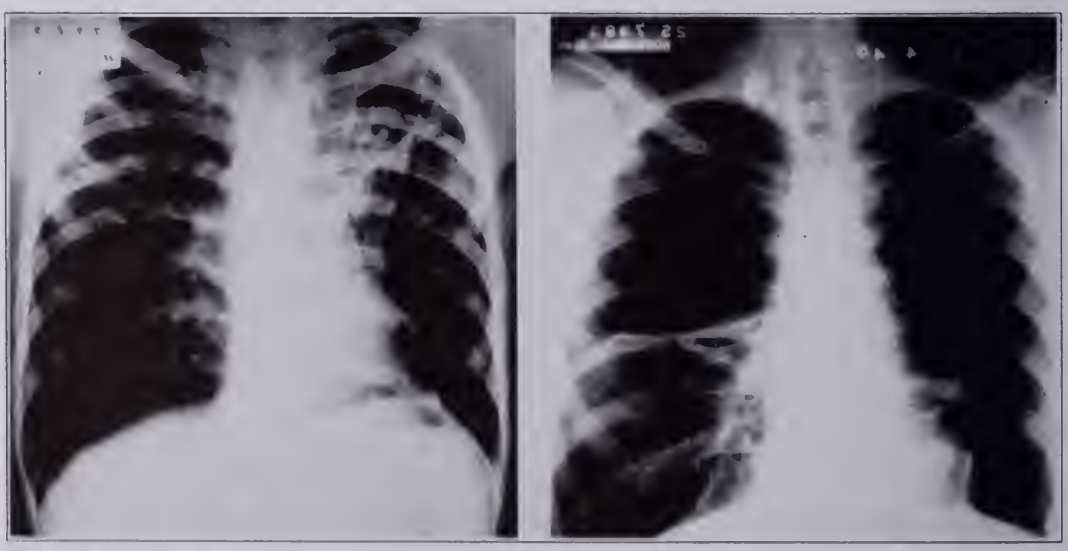
TABLE I

Modified Results of Bilateral Pneumothorax as Reported by Various Authors

Author	Year	No. of Cases	% Inactive	% Active & Dead	% Questionable
Coulaud	1930	116	34	66	—
Moorman	1930	8	25	62	13
Pollack and Marvin	1932	25	52	48	—
Bull. City of Chicago	1933	90	31	69	—
Kinsella and Mattill	1934	90	36	64	—
Myers and Parkman	1936	44	undetermined	25	75
Carman	1936	15	67	20	13
Corsello	1936	36	50	50	—
Spinedi	1936	130	42	58	—
Jones	1937	36	55	45	—
Douglas	1938	205	52	39	9
Potter	1938	152	40	53	7
Fermin Mas	1938	22	32	50	18
Gaetan	1938	100	41	59	—
Salas	1940	100	44	27	29
Hopemont Sanitarium	1940	56	34	66	—

The greater the extent of the disease, the poorer is the end result, regardless of the type of therapy. As an example, Aycock and Keller in a review of 530 cases treated with artificial pneumothorax obtained "satisfac-

FIGURE 1—CASE NO. 7983



(A) Bilateral far advanced disease on admission. (B) Effective bilateral pneumothorax.

tory" results in all 18 cases with minimal tuberculosis; in 86 per cent of the 133 cases with moderately advanced disease; and in only 44.5 per cent of the 379 cases with far advanced disease. These figures are comparable with those reported by other clinics.

It is customary in classifying a case as minimal, moderately advanced or far advanced, to consider that classification as a measure of the total disease. In June, 1940, Salkin and Cadden, in a paper read before the convention of The Association for Thoracic Surgery, pointed out the desirability of a supplemental classification, expressing in addition to the total amount of disease, the amount of disease in each lung. The prognosis and the chance of a favorable result from collapse therapy depends not only on the total amount of disease, but also on the extent of disease in each lung. Given two cases of far advanced disease, one with far advanced disease in each lung, and the other with moderately advanced disease in each lung, one will readily appreciate the difference. Hence, the results will depend upon the type of far advanced and moderately advanced cases in any given series. In this paper the cases will be classified as to total disease and the disease in each lung.

The results will also vary with the type of disease predominating. Most clinics feel that the results in cases with chiefly exudative disease are poorer than in those with mixed or fibrocavernous disease. However, Aycock and Keller reported much better results with pneumothorax in the treatment of exudative disease than in fibrocavernous disease. Possibly a large part of this discrepancy is due to the different conception of what constitutes exudative disease, and the time at which pneumothorax or other therapy is induced in the course of the disease.

TYPES

Bilateral pneumothorax cases are divided into two groups: (1) simultaneous collapse, which may mean either collapse of the second lung immediately after the first or sometime later during the course of the pneumothorax on the first side; and (2) consecutive, that in which the first side has been reexpanded before the second side is collapsed. Those cases where the first side is represented by a hydrothorax or hydropneumothorax secondary to artificial pneumothorax, we include under simultaneous pneumothorax.

INDICATIONS

The indications for bilateral pneumothorax, in our experience, are simple and are largely determined by each individual case. In general we consider the following indications:

(1) Those cases which show advanced bilateral disease, preferably localized, where the first side can be controlled, and sufficient good lung remains uncollapsed to provide adequately for respiration.

(2) Those cases in which there is an extension of disease on the contralateral side during the course of a unilateral pneumothorax, or where the contralateral side presents an unstable lesion, especially in those cases which do not respond to further strict rest or phrenic nerve surgery.

(3) Uncontrollable hemorrhage from the contralateral side during the course of a unilateral pneumothorax.

These indications are accepted generally. In more recent years we have felt that as a rule the first side should show closure of cavities and appear to be successfully controlled before attempting collapse of the second side. This type of case presents much the better prognosis.

The cases in which bilateral pneumothorax is used are limited as a rule to those which have either a moderate or far advanced disease in each lung. We seldom use pneumothorax in minimal cases. Thus we would find any report made up chiefly of the following groups of cases:

Far advanced — far - far.
far - mod.
mod. - mod.

Moderately advanced — mod. - mod.

This report is based on fifty-six such cases and represents approximately 10 per cent of the pneumothorax cases done at Hopemont

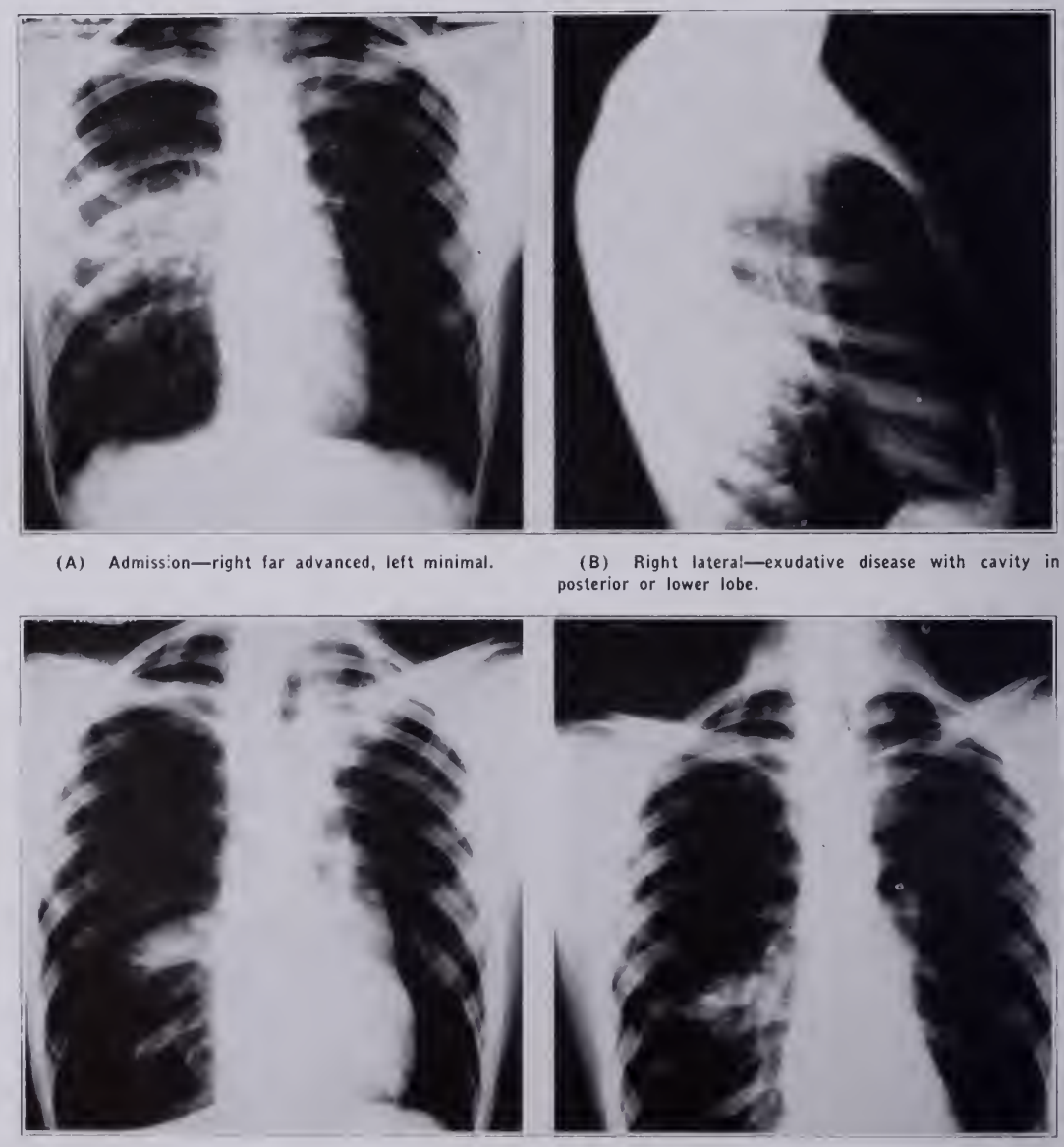
Sanitarium. This is a similar percentage to that reported elsewhere.

Despite the relatively small number of cases in this series, it represents a cross-section of collapse therapy at this institution and compares favorably with collapse therapy in general both here and elsewhere.

ANALYSIS OF CASES

The fifty-six cases in this series constitute all the cases of bilateral pneumothorax done at Hopemont Sanitarium from January, 1935 to July 1, 1940. The course of the patients has been followed until September 1, 1940. The cases which have been started in the last year are included in this series as they have been of such a type that the probable result can be appraised in less than the average length of time; i. e., either a satisfactory selective collapse has been obtained, or an unsatisfactory shallow pneumothorax which presents little likelihood of a good result. The series includes all cases in which a bilateral space was obtained, and those in which a fatal complication accompanied the initial

FIGURE 2—CASE NO. 9063



(A) Admission—right far advanced, left minimal.

(B) Right lateral—exudative disease with cavity in posterior or lower lobe.

(C) Right selective pneumothorax. Left—moderate lesion with cavity has developed while on bed rest.

(D) Selective bilateral pneumothorax.

procedure. Any case in which a space was obtained is included even though it was immediately found to be unsatisfactory and abandoned. It also includes cases in which a spontaneous pneumothorax occurred on one or the other side.

The fifty-six cases include forty females and sixteen males. The proportion of females to males admitted to this institution during this time has been about fifty-two to forty-eight. We feel this disparity in the series is partly due to the fact that many more of the males admitted are in the older age group, and hence less likely candidates for bilateral collapse. The average age of the cases has been twenty-three and the range has been from ten to fifty-three years. The females have averaged twenty-two years; the males twenty-four years. All patients were members of the white race.

PERCENTAGES

At the time of admission to Hopemont Sanitarium fifty-two cases or ninety-three per cent were far advanced and four cases or seven per cent were moderately advanced. Classifying these cases as to total disease and extent of disease for each side we have:

Far advanced—52 cases or 93 per cent.

Both sides far advanced ..... 30 cases
One side far, one moderate ..... 13 cases
One side far, one minimal ..... 5 cases
One side far, one clear ..... 1 case
Both sides moderately advanced ..... 1 case
One side far, one spontaneous pneumothorax ..... 2 cases

Moderately advanced—four cases or seven per cent.

Both sides moderately advanced ..... 2 cases
One side moderate, one minimal ..... 2 cases

At the time of beginning pneumothorax fifty-three cases were far advanced and three moderately advanced. These cases classified as to the extent of disease of each lung at the time of starting pneumothorax on each side were:

Both sides far ..... 31 cases
One side far, one moderate ..... 20 cases
One side far, one spontaneous pneumothorax ..... 2 cases
Both sides moderately advanced ..... 3 cases

TABLE II

Extent of Disease of Each Lung at Time of Starting Pneumothorax on Each Side

Extent of Disease	Cases	Percentage of Total
Both sides far advanced	31	55
One side far, one moderate	20	36
One side far, one spontaneous pneumothorax	2	3.5
Both sides moderate	3	5.5

Following the N. T. A. symptomatic classification, there were forty-five cases classified as "B", and eleven cases as "C." There were no asymptomatic or "A" cases. Cavity was present in fifty-four cases, absent in two cases. Sputum was positive in fifty-five cases, negative in one (a ten year old boy). Forty cases showed a mixed type of disease while sixteen were chiefly exudative. There were forty-nine cases of simultaneous bilateral pneumothorax. At the time of instituting pneumothorax on the second side, the collapse of the first side was maintained by air alone in forty-four cases; by hydropneumothorax in four cases and by hydrothorax secondary to pneumothorax in one. Seven cases were consecutive in type.

The interval between starting the two sides varied from eleven days to fifty-five months, and averaged sixteen months. The right side was begun first in thirty-six cases, the left side in twenty cases. The first side was controlled in twenty-one cases when starting the second side, and uncontrolled in thirty-five cases.

Phrenic crush was added in twenty cases on the first side, in only two cases on the second side. Pneumonolysis was added in two cases on the first side, and in three cases on the second side. (Pneumonolysis in these cases was performed elsewhere and for this reason could not always be done when indicated). All cases received bed rest twenty-four hours a day in addition to collapse therapy, until three to six months after the sputum was negative, cavity closed and the

lesion was either stationary or regressive as interpreted by serial x-ray examinations.

A blocked cavity was found in ten cases, and a basal lesion in eleven cases, two of which showed a bilateral basal lesion.

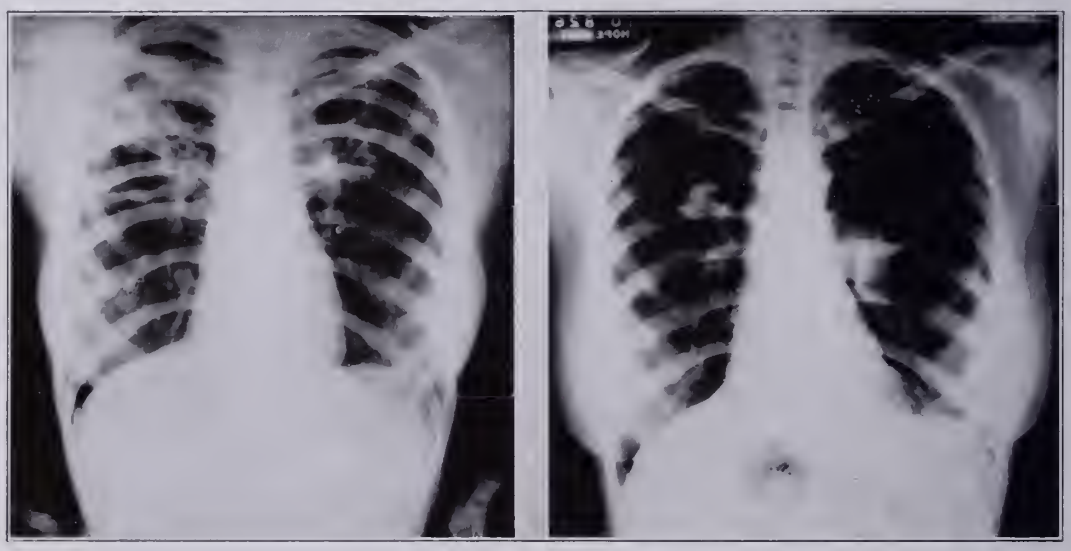
RESULTS

In formulating results we have divided the cases into inactive, and active or dead. As previously outlined, our criteria for classifying a case as inactive are (1) a negative sputum by repeated concentrated examinations, and cultural methods when indicated; (2) absence of cavity; (3) a stationary or regressive x-ray appearance; and (4) an absence of symptoms. An active case is one in which the above criteria cannot be met and may include cases otherwise classed as quiescent, improved and unimproved. We do not feel that a case can be considered a satisfactory result if the disease has not been arrested and become inactive.

In two cases, a positive sputum has persisted or recurred with an apparently controlled parenchymal lesion. Bronchoscopic examination revealed a definite tuberculous bronchitis which we feel may be the source of the positive sputum. Bilateral pneumothorax was effective in controlling the parenchymal disease in these cases, and we consider them inactive in our analysis. However, the individuals still have active tuberculosis and because of this the prognosis is less favorable. For this reason, in our final tabulation, we have considered these cases active.

In the cases where the disease was controlled, it took an average of 11.7 months to control the first side and 10.3 months to control the second side. By control of disease, we mean cavity closure and a stationary or regressive lesion. The duration of effective collapse on the first side averaged 34.4 months, and on the second side 21.6 months. The average total months of pneumothorax were 46 on the first side, and 32 months on the second. The average difference between the two sides was sixteen months in all cases and fourteen months in the controlled cases. A bilateral pneumothorax is still in progress in twenty cases, a unilateral pneumothorax in sixteen cases. Both sides have been reexpanded in seven cases, and death occurred in 13 cases.

FIGURE 3—CASE NO. 8260



(A) Bilateral far advanced disease on admission. (B) Selective bilateral pneumothorax.

TABLE III

Status of Pneumothorax — September 1, 1940

Inactive Cases		Active Cases	
Bilateral pneumothorax still in progress	19	Bilateral pneumothorax still in progress	1
		One side controlled.	
Unilateral pneumothorax still in progress	7	Unilateral pneumothorax still in progress	9
Both sides reexpanded	1	Both sides reexpanded	6
		Dead	13
TOTAL	27	TOTAL	29

Of the fifty-six cases, nineteen are inactive. Two additional cases have an active bronchitis with positive sputum but an apparently controlled parenchymal lesion. Six additional cases have become inactive with additional procedures after reexpansion of the uncontrolled but improved lung. Thirteen cases are known to be dead and sixteen are active. Of the sixteen active cases, four have one side controlled with pneumothorax at this time, and further therapy may be possible on the contralateral lung at some future date.

TABLE IV

Results of Therapy

Results	Cases	Percentage
Tuberculosis inactive by means of pneumothorax	19	34
Parenchyma inactive but active bronchitis	2	3.5
Tuberculosis inactive by additional methods after reexpansion	6	10.7
Tuberculosis active	16	28.8
Dead	13	23
TOTAL	56	100

Of the fifty-six cases, thirty-one had far advanced disease in each lung. Of these cases, ten are inactive as the result of pneumothorax, and two others inactive by additional means after reexpansion of the uncontrolled lung. Nineteen cases are active or dead.

There were twenty cases with far advanced disease in one lung, and moderately advanced disease in the other lung. Seven of these are inactive; two have an inactive parenchymal lesion but an active bronchitis; four others have become inactive as the result of additional procedures after reexpansion of the uncontrolled lung; seven are active or dead.

TABLE V

Results of Therapy

	Stage of Disease			
	Total Far Advanced One Side Far; One Mod.		Total Far Advanced Both Sides Far	
Result	Cases	Percentage	Cases	Percentage
Inactive	7	35	10	33
Parenchyma inactive but active bronchitis	2	10	0	0
Inactive by additional means after reexpansion	4	20	2	7
Active or dead	7	35	19	60
TOTAL	20	100	31	100

Two cases were admitted with far advanced disease on one side and a spontaneous pneumothorax on the other. In one case the pneumothorax occurred prior to any examination, and the lung has not reexpanded. We do not know the extent of disease in this lung. The other case had a bronchopleural fistula and empyema and we do not know the extent of parenchymal disease. Both cases did poorly; one is active and the other dead.

Three cases had bilateral moderately advanced disease for a total of moderately advanced. Two cases are inactive and one is dead. We feel that such a small number of cases does not warrant consideration in any analysis and hence they will not be discussed. However, it is reasonable to assume that this type of case would give the better results in a larger series.

A temporary phrenic crush was added in some cases to give additional collapse. In five cases a pneumonolysis was done, and in all of these cases a satisfactory result was obtained.

TABLE VI

Collapse Therapy

	First Side			Second Side		
Therapy	Cases	Effective	% Effective	Cases	Effective	% Effective
Pneumothorax plus bed rest	35	21	60	52	24	46
Pneumothorax plus temporary phrenic crush plus bed rest	19	10	52	1	0	0
Pneumothorax plus pneumonolysis plus bed rest	1	1	100	2	2	100
Penumothorax plus lysis plus phrenic plus bed rest	1	1	100	1	1	100
TOTAL CASES	56	33	59	56	27	48

More favorable results were obtained when the first side was controlled before attempting collapse on the second side. Of the twenty-one cases in which the first side was controlled prior to instituting contralateral collapse, seventeen (81 per cent) are now inactive (including two cases with an active bronchitis and two in which further therapy was done after reexpansion of one lung). Of the thirty-five cases in which the first side was not controlled when contralateral collapse

was instituted only ten (29 per cent) are now inactive (including four cases in which further therapy was done after reexpansion of one lung). It is on the basis of this marked contrast in results that we now attempt whenever possible to control one lung, before instituting pneumothorax on the second side.

TABLE VII

Bilateral Results Relative to Status of First Side

Status of First Side	Cases	Bilateral Result Inactive	Active	% Inactive
First side controlled when starting pneumothorax on second side	21	17	4	81
First side uncontrolled when starting pneumothorax on second side	35	10	25	29

Better results were found in that group of patients whose general condition was more favorable. Of the forty-five cases grouped as symptomatic "B", twenty-four (53 per cent) are now inactive (including those with a bronchitis) and twenty-one are active or dead. Only three (27 per cent) out of eleven cases with "C" symptoms are now inactive. Bilateral pneumothorax was a failure in those cases in which it was used as a desperation procedure.

The results with a mixed type of disease were more favorable than those with chiefly exudative disease. Six of the sixteen (37.5 per cent) with exudative disease are now inactive while twenty-one of the forty (53 per cent) with fibrocavernous or mixed disease are now inactive.

Results were less favorable in those cases which presented a basal lesion. Of the eleven cases, only four (36 per cent) are inactive. Two cases had a basal lesion on both sides, and both of these did poorly.

There were twelve cases in which pneumothorax was successful in controlling one lung but the contralateral lung was not controlled, although usually improved. In these cases, additional therapy was done after reexpansion of the uncontrolled lung. Additional bed rest in five cases resulted in inactivation of the disease in three (60 per cent), while two cases remained active. Further bed rest coupled with a temporary phrenic crush was done in six cases, with a good result in two (33 per cent), and failure in four. Thoracoplasty was successful in the one case done in this series.

COMPLICATIONS

Complications occurred in twenty-two of the fifty-six cases, an incidence of thirty-nine per cent. This compares with an incidence of twenty per cent found by Salkin and Cadden in a review of all cases of pneumothorax. This should be considered when bilateral pneumothorax is contemplated. Massive spontaneous pneumothorax (instrumental) occurred in six cases with two immediate deaths (within five days). The results in the other four cases were all poor. A serofibrinous effusion occurred in eight cases and an empyema in nine others. There were no cases of bilateral empyema, which condition is generally quite rare. Small transitory serous effusions occurred in most of the cases at some time during their course. There were two cases of bronchopleural fistula, one pleurocutaneous fistula, and one air embolism (without permanent damage). In two cases attempt at reexpansion failed; three cases showed progressive myocardial failure. One boy of ten showed a severe chest deformity during the growth period.

There was a demonstrable mediastinal herniation of the pleura on x-ray films in ten cases. This would probably be much higher if routine expiratory films were taken. We do not consider this herniation a complication of any clinical importance.

ASSOCIATED DISEASES

Tuberculosis elsewhere was found frequently. We considered a tuberculous focus to be present elsewhere only if a lesion could be definitely demonstrated; by bronchoscopy in tuberculous bronchitis; by x-ray in intestinal and bone tuberculosis; or by pathological report in most other foci. Tuberculous laryngitis was demonstrated seven times; tuberculous bronchitis eight times; tuberculous enteritis nineteen times; and once each

tuberculosis of the spine, middle ear, cervical glands, and tubes and ovaries. The incidence of bronchitis would probably be higher if all cases had received bronchoscopic examination. Diabetes was present in one patient who died. Each of the following occurred once: Salpingitis, syphilis and gonorrhea, gall-bladder disease, paroxysmal tachycardia, pelvic inflammatory disease, anxiety neurosis, and suppurative mastoiditis.

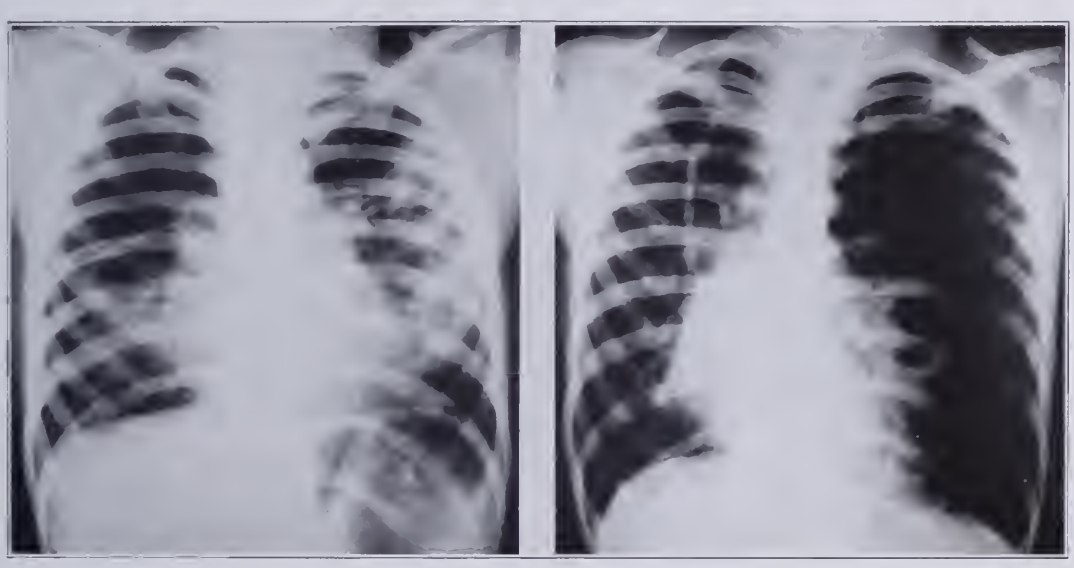
Generally tuberculosis of the bronchus, larynx, or intestine improved with control of the pulmonary parenchymal lesion. None of these was considered a contraindication to bilateral pneumothorax.

CONCLUSIONS

On the basis of this study we have reached certain conclusions which we feel can serve as a working pattern. Modifications must be made to meet the individual case.

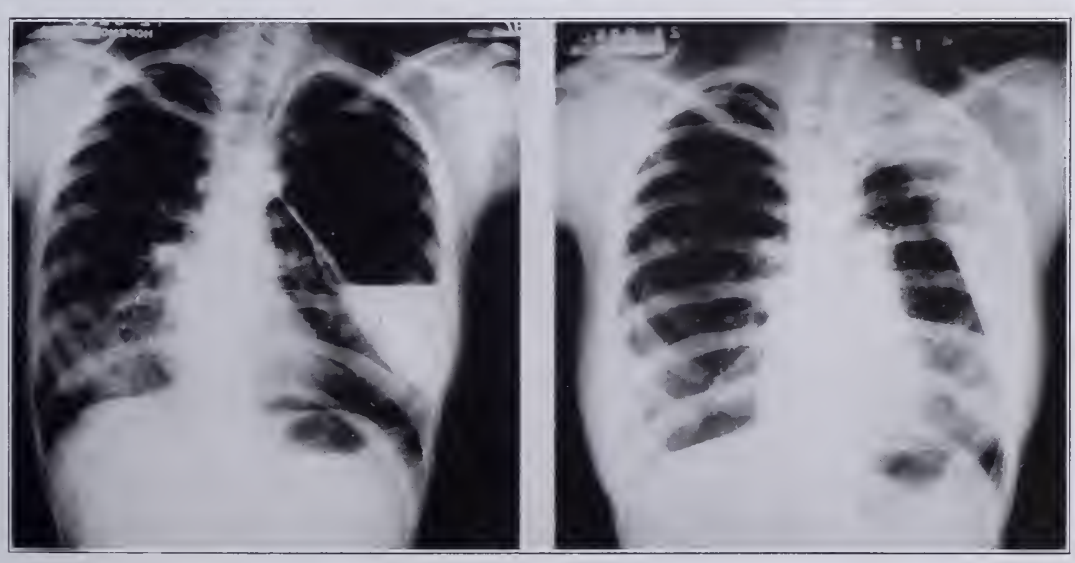
Bilateral pneumothorax is of definite value in the treatment of pulmonary tuberculosis with bilateral involvement. This is especially true when that involvement amounts to either

FIGURE 4—CASE NO. 8250



(A) Bilateral far advanced disease on admission.

(B) Left pneumothorax ineffective because of adhesions. Herniation of left pleura.



(C) Left pneumothorax effective after pneumonolysis. Cavity on right persists.

(D) Effective right pneumothorax. Left hydrothorax secondary to pneumothorax.

(1) moderately advanced disease in each lung for a total of moderately or far advanced disease, or (2) far advanced disease in each lung, or far advanced in one lung and moderately advanced in the other for a total of far advanced disease. This series of cases is made up largely of the latter group with more extensive disease. The successful results vary in inverse proportion to the extent of the disease. However, cases in such a group should to some extent be selective. We feel that a period of bed rest should be given prior to attempted collapse in that group whose general condition is extremely poor.

Collapse therapy is an adjunct to rest, and all cases should receive bed rest twenty-four hours a day until three to six months after the disease is apparently controlled, or regressive. Whenever possible, collapse procedures should be concentrated on controlling the disease in the first lung before instituting contralateral pneumothorax. The prognosis is much more favorable if this can be achieved. Other procedures such as phrenic crush and pneumonolysis should be added whenever indicated. Frequently pneumothorax, even if not successful, may result in sufficient improvement to allow further therapy after reexpansion of the lung.

Complications in bilateral pneumothorax occur twice as frequently as in unilateral pneumothorax. This should be considered when bilateral pneumothorax is proposed.

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Value of Vitamin D

"Except in the cases of some lactating women (who are nursing babies), evidence is meager that milk containing more than 400 U. S. P. (United States Pharmacopeia) units of vitamin D to the quart would have any nutritional advantages over milk containing but 400 U. S. P. units to the quart", the Council on Foods and Nutrition of the American Medical Association declares in the Association's *Journal* for February 1, in explaining why it has voted not to include for the present in its list of accepted foods any brands of milk for which claims are made that they contain more than this amount of the vitamin.

For persons who need more than the amount of vitamin D which can be provided with suitable amounts of milk containing 400 U. S. P. units of it to the quart, numerous other preparations can be prescribed, such as those described in New and Nonofficial Remedies", the Council says. "Incidentally, it may be stated further that the Council believes preparations such as those described in N. N. R. are fully as effective, unit for unit, as vitamin D in the form of vitamin D milk, provided the concentration of vitamin D is not appreciably greater than 180 units to a gram of oil.

"The evidence hitherto available suggesting the desirability of a higher amount of vitamin D in milk for protection from dental caries is not considered conclusive. Should evidence be developed to indicate that milk of higher potency is nutritionally desirable, the Council then will give further consideration to the acceptability of such products.

"One quart of vitamin D milk containing 400 U. S. P. units of vitamin D is equivalent in vitamin D potency to one and one-third teaspoon of minimum strength U. S. P. cod liver oil.

THYMIC MALIGNANCY

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MUCH has been written but a great deal is still unknown regarding the normal functions and physiology of the thymus gland. The same is true concerning the pathology of the thymus, and there is still confusion as to the proper terminology to be used in describing neoplastic lesions.

The thymus is rarely the seat of primary new growths, and extremely rarely a site for metastasis from other neoplastic growths. It is noteworthy that tumors of the thymus were known to Virchow, who pointed out that the "gland" seemed to be the "starting point" of lymphosarcoma. The first available description of thymic new growths is attributed to Friedleben in 1858. Further pathological features and a classification of thymic malignancies will be discussed later. The incidence of new growths of the thymus, from a large series of autopsy examinations, is quoted from 0.036 to 0.15 per cent.[1 2 3] While this monograph was being prepared, a recent paper by Bomze and Kirshbaum came to our attention.[1] Our case serves as a basis for a resumé of the literature to date and presents a correlation of the clinical features that warrant its presentation in detail.

SYMPTOMATOLOGY

While no syndrome might be stated as being entirely characteristic of space consuming lesions of the thymus, there are certain features which predominate, and seem to be definitely related to pressure and displacement phenomena of the structures in the anterior and superior mediastinum. This syndrome, which is repeated over and over in the cases available in the English literature[6] and in translations from the European literature,[4-5-8] might well be called the "Syndrome of the Anterior Superior Mediastinum." A short anatomical survey of the mediastinum may well be given.

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The thoracic mediastinum is that portion of the thoracic cavity located in the midline, of an irregular contour, extending from the superior aperture of the thorax above, to the diaphragm below, and between the sternum anteriorly, and the thoracic vertebra posteriorly. The lateral boundaries of the mediastinum are formed by the right and left parietal pleural reflections, respectively. While the mediastinum is not a true space, it may be somewhat arbitrarily divided as follows:

(1) The superior mediastinum, bounded above by the thoracic aperture, below by an imaginary plane passing from the fourth and fifth thoracic discs posteriorly to the junction of the manubrium and body of the sternum anteriorly, its anterior surface by the manubrium itself, and posteriorly by the first four thoracic vertebral bodies. Its lateral boundaries are the upper portions of the pleural reflections. The contents of the superior mediastinum are the upper portion of the thymus gland, the trachea, esophagus, the arch of the aorta, and great vessels arising from the arch; the innominate veins, the superior vena cava, the vagus, phrenic, and left recurrent laryngeal nerves; the thoracic duct, and the superior portions of the roots of the lungs.

(2) The anterior mediastinum, a shallow

potential space lying between the pericardium posteriorly, the pleural reflections laterally, and the body of the sternum and the left fifth, sixth and seventh costal cartilages, anteriorly. The most important structure in the anterior mediastinum is the lower portion of the thymus.

(3) The middle mediastinum, generally thought to be synonymous with the pericardial space. Its contents consist of the heart, the ascending aorta, the trunk of the pulmonary artery, the cardiac end of the superior vena cava, the major portion of the roots of the lungs, and the phrenic nerves.

(4) The posterior mediastinum, bounded by the pericardium and roots of the lungs anteriorly, pleural reflections laterally, and the lower eighth thoracic vertebra posteriorly. It is limited above by an imaginary line through the fourth thoracic vertebra and below by the diaphragm. Most of its structures are extensions from the superior mediastinum.

Thymic new growths therefore consuming space in this region, produce the majority of the symptoms at least by pressure or displacement of contiguous structures.[1-5] It is not to be thought that the entire clinical picture is due to pressure effects, for many cases are encountered in which there is invasion of neighboring structures, particularly the pleura, lung tissue, pericardium, and heart muscle.[1-6] It is likewise noteworthy that erosion of the trachea, esophagus, pulmonary vessels and vena cava are reported. Our case illustrates beautifully both displacement phenomena and direct invasion by contiguity of tissue of important pulmonary and cardiac structures.

SYMPTOMATOLOGY

The onset of symptoms may be acute and fulminating, or insidious. Hence, the symptoms in the order of their frequency are cough, dyspnea, often paroxysmal in type, orthopnea, hoarseness, a visible "swelling" which might be either a tumor mass or "puffiness" of the neck, face, or arm, noted by the patient. Occasionally, an observant parent or the patient may notice a cyanosis of the lips or fingernails, and perhaps it will be noted that the veins of the neck are prominent. In children, early manifestations are often attributed to a "cold", "bronchitis", or one of the exanthems. This type of onset seems to be more common in children. The gradual, insidious onset may be interpreted by adult patients as due to "too much smoking", "bronchitis" or other everyday causes. It appears from reported cases,[6-7-8] that occasionally several months to a year might elapse before the patient seeks medical attention and examination. The cough is not as a rule productive, is sometimes quite "brassy", and not much relief is obtained by coughing. There may be an occasional expectoration of blood-tinged sputum, but we have not encountered any profuse hemoptysis in our review of the reported cases. In analyzing the symptom of cough, it is obvious that pressure and displacement phenomena on the trachea are the most logical explanation. At times the left recurrent laryngeal nerve may be impinged upon in the superior mediastinum. Dyspnea is almost a constant feature although it seems to vary from time to time, or with change in position, especially in the recumbent or left lateral position. The dyspnea may come in paroxysms; it seems to grow progressively more pronounced, and is often quite distressing. It is apparent that dyspnea, at least in the beginning, is likewise due to alteration in the anatomical position of the tracheobronchial structures, although at a later date pleural or pericardial effusion may be produced, with their secondary effects. It appears that exertional dyspnea is a comparatively late phenomenon, and is probably dependent upon pleural or pericardial effusion. Orthopnea has already been mentioned, and probably may be explained on the same basis. Hoarseness, while not invariable, may be a presenting symptom, and is probably best explained by left recurrent laryngeal nerve distortion. The appearance of an abnormal mass or of edema may be mentioned, but is seldom present without other previously delineated symptoms, and not until late in the course of

the disease. Other less pronounced symptoms, and these occur as a rule in the terminal portion of the illness, may be engorgement and tenderness of the liver, abdominal swelling, and edema of the genitalia, feet and legs. It is quite striking that pain is not a presenting feature; in fact, true thoracic pain is extremely rare. The absence of pain is noteworthy in that numerous protocols mention both parietal and visceral involvement of the pleura and pericardium. One must mention other seemingly unrelated symptoms as regards urinary, gastrointestinal, or osseous systems; these may be the expression of metastasis.

PHYSICAL EXAMINATION

Often with small growths, there may be no demonstrable physical signs, especially if one has not elicited a careful history. The interpretation of symptoms arising in the superior and anterior mediastinal structures is of utmost importance. The most consistent physical findings seem to be: (1) The obvious dyspnea or orthopnea; (2) the cough as heard while examining the patient, and (3) cyanosis, which may be evident or very slight. Cyanosis is most common in the lips, fingernails, lobes of the ears, and may vary from time to time. The distention of the superficial veins over the thorax, in the neck, and in one or both arms, is significant. Edema of one side of the face, neck, and occasionally of the left arm is usually a late sign. This edema may be accompanied by punctate hemorrhagic areas, but this is often terminal. Careful physical examination of the chest is of utmost importance in order to determine if there are bulging of the interspaces, decreased respiratory expansions, or other visible signs on inspection. Presence or absence of fluid in the pleural cavities should be noted, for a pleural effusion may be the first signal for further investigation. Careful auscultation may reveal change in breath sounds and other phenomena of the pleural effusion. Of necessity, a diagnostic thoracentesis should be done, and in the presence of blood-tinged fluid, viewed as highly significant. Careful cardiac examination with blood pressure readings in both arms is indispensable, plus fluoroscopic and radiologic observation of the chest and cardiac silhouette. Ascites and peripheral edema, especially in the presence of visible venous engorgement, must be further investigated.

CASE REPORT

A white female, age five, was admitted to Camden-Clark Hospital, April 3, 1939, on pediatric service of Dr. A. M. Jones. The history, obtained from the parents who were of average intelligence, was as follows: The child had seemingly been perfectly well from birth, having had no serious childhood diseases. She was an only child, and had developed in an apparently normal fashion until the onset of the present illness. The first complaint was of distress and fullness in the midepigastrium, which had appeared in the early part of March, 1939. At the onset of this midepigastric distress there had likewise been slight pain in the left elbow and shoulder with no redness, tenderness or swelling about the joints. There was no nausea, vomiting or change in bowel habit. No temperature elevation had been noted until about two weeks before admission, when there was some mild diurnal pyrexia. The parents, thinking the child "had a cold" deferred medical attention until it was noted that she experienced difficulty in breathing, and was forced to prop up on pillows to sleep. Some abdominal distention was noted approximately a week before admission. There was said to have been no cough or expectoration at any time, and the dyspnea had evidently been of a paroxysmal type, aggravated by prone position or by lying on the left side. No other symptoms or signs noted by the parents could be elicited. The referring physician, Dr. A. M. Jones, when consulted in the office, noted that there was a distinct displacement of the cardiac apex to the right and that moderate cyanosis was present. Hospitalization was advised, and a cardiac consultation requested.

Physical examination revealed a fairly well nourished and developed white female child, obviously dyspneic even in a semi-upright position. Temperature was 100 degrees F.; pulse, 140 per minute; respirations, 40. There was a slight cyanotic tinge to the lips and fingernails, and the left side of the neck and face appeared "puffy" without pitting elicited. There was no obvious venous distention of the chest, neck, or arm on this examination. Ex-

amination of the head, ears, and eyes was not remarkable. There was no Horner's syndrome. The tonsils, while large, were not acutely inflamed or infected. No adenopathy was noted. The chest showed definite bulging of the left thoracic cage with obliteration of the interspaces to some extent. Expansion was practically nil on this side. On auscultation and palpation, the percussion note was flat over the entire chest and vocal fremitus absent. No breath sounds were heard over this area, and pectoriloquy and egophony were absent. It was noted that the trachea appeared displaced toward the right. Anteriorly on the right side there was an area of dullness to percussion extending 5.0 cm. from midline in the third and fourth interspaces, and in this area breath sounds were absent. There was likewise a definite decrease in pulmonary sounds over this area. Examination of the cardiovascular system revealed no visible or palpable apex beat in the "normal" position. (Some findings are given above). Over the right third and fourth interspaces, about 4.0 cm. from midline, a pulsation could be detected synchronous with the radial pulse. Cardiac dullness could not be elicited over the left chest, and dull percussion note was elicited on the right as described above. No heart sounds were audible over the left chest, but as the stethoscope was moved toward the sternum and to the right, sounds became audible. These sounds were muffled and distant, of a regular rhythm, but with a rate of 140 per minute. Blood pressure in right arm was 102 mm. of mercury systolic, 77 mm. diastolic; in the left arm, 94 mm. systolic, 70 mm. diastolic. There was a loud systolic bruit, best heard over the right third interspace, and propagated toward the vessels of the neck, while a blowing low-pitched diastolic murmur was audible over the midsternal area, decreasing to the right and left. There was mild distention of the abdomen with no demonstrable fluid wave or visible veins. The liver could not be palpated or percussed; the spleen likewise. No edema of the genitalia or legs was noted on this examination.

CLINICAL IMPRESSION CONFIRMED

It was thought definitely that pleural and pericardial effusion were present, but fluoroscopic examination was done, and chest plates were taken to confirm the clinical impression. Immediate thoracentesis was done in the left posterior axillary line in the seventh interspace, and 600 c.c. of serosanguinous fluid obtained. There was some relief in the dyspnea and cyanosis but no change of physical signs. Accordingly, a paracentesis pericardii was done in the fourth right interspace 20 cm. from the left of the sternal border and 300 c.c. of fluid almost identical to that of the thoracentesis was obtained. Very little objective changes were noted, though the child seemed more comfortable. While waiting for laboratory reports on blood, urine, and transudate fluids, several diagnoses were considered:

(1) Acute rheumatic fever with pleural and pericardial effusion.

(2) Pulmonary tuberculosis with pleural and pericardial involvement.

(3) Thoracic malignancy, possibly a malignancy in the region of the left auricle with metastasis. (The diagnosis of primary cardiac malignancy was considered because of the bloody characteristics of the pericardial effusion).

LABORATORY FINDINGS

Urinalysis, April 4, 1939: Yellow, specific gravity, 1.018; acid reaction; negative for albumin and sugar; abundant pus cells, clumps; few epithelial cells and casts. April 19, 1939: Yellow; acid; heavy trace of albumin; negative for sugar; two to three pus cells; few RBC's.

Blood count, April 4, 1939: Hemoglobin, 73 per cent; RBC's, 4,250,000; WBC's, 10,400; color index, 0.77; neutrophiles, 66; banded forms, 30; segmented, 36; lymphocytes, 28; monocytes, six.

Wassermann and Kahn: Negative.

Pleural fluid, April 5, 1939: Loaded with RBC's. Smears, negative bacteria, few leukocytes, probably blood cells. This fluid does not appear to be an exudate. Culture sterile in 24 hours.

April 16, 1939: Smears and culture from pleural and pericardial fluid. Smears, few cocci in pairs; negative tuberculosis; culture sterile.

April 17, 1939: Pleural fluid sterile; pericardial fluid sterile.

Blood culture: April 14, 1939, blood culture taken.

April 20, 1939: Sterile after six days incubation. Microscopic examination: Paraffin sections of sediment of pleural fluid shows blood cells with no cells suggesting malignancy being noted.

June 2, 1939: Guinea pig inoculated with pleural fluid, reported as negative.

Treatment was symptomatic and more or less empirical. Repeated pleural and pericardial drainage was done on alternate days with some relief of orthopnea, dyspnea, and cyanosis. In spite of these repeated drainages (500 to 700 c.c. pleural

and 140 to 300 c.c. pericardial), there were no physical or röentgen signs of lessening in the amounts of fluid. It was noted that "rapid accumulation of fluids in both pleural and pericardial spaces makes prognosis very grave." The course was dishearteningly downhill, and dyspnea, cyanosis, and orthopnea continued. Edema of the legs and feet appeared about four days before death, at which time it was noted that distention of the veins on the left side of the neck and in the left arm was marked, and petechial hemorrhage appeared. There was definite pitting edema of the entire left side of the face, neck and left upper extremity. Cough became a troublesome feature and death followed inexorably in spite of all attempts at therapy.

This note was made following death and while permission for autopsy was being obtained: "This case is an extremely puzzling one. The rapid accumulation of bloody fluid in pleural and pericardial spaces certainly points to either a malignant process of the serous membranes or to tuberculosis. I favor pericardial malignancy with primary focus in the left auricular region."

ANATOMICAL DIAGNOSES

1. Lymphosarcoma (thymoma) of mediastinum with local metastases to lung and pleura, pericardium and diaphragm.
2. Chronic pulmonary tuberculosis (right subpleural).
3. Left serofibrinous pleural effusion.
4. Serous pericardial effusion.
5. Chronic passive congestion of lungs, liver, etc.
6. Lymphoid hyperplasia, mesenteric lymph nodes.

External examination: The body is that of a young white female child; age estimated, five years. There is generalized edema, particularly of the lower extremities and the external genitalia, face and left orbital and frontal areas. The skin is rather dark. There is an indefinite fine petechiæ-like rash on the left side of the face extending down the left side of the neck and left shoulder. The pupils are equal and irregular. The cervical, axillary, and inguinal lymph glands are enlarged moderately. There is bulging of the left side of the chest. Percussion note of the left chest is flat.

(1) Lymphadenopathy (moderate) (neck, axillary, and inguinal).

(2) Left chest completely filled with reddish-yellow fibrinous fluid. Left lung collapsed against mediastinum. Heart pushed to right. Pericardium distended by cloudy yellowish fluid. A large tumor mass occupied the upper and left medial portion of the mediastinum. This extended downwards over the left lung to which it was firmly adherent, also over the pericardium and on to the left diaphragm. It weighed 225 grams and measured 15 x 8 x 3.5 cm. It appeared to be made up of several lobules having a fairly firm and uniform stroma of grayish yellow color. There were scattered areas of up to two cm. diameter that had a deeper yellow color and were well demarcated. No caseation was found.

(3) The right lung showed one subpleural yellowish nodule thought to be a tubercle, and which was confirmed microscopically.

(4) In the abdomen the only interesting feature was moderate enlargement of the mesenteric lymph nodes. The spleen was of normal size.

Microscopic study of the tumor showed a very uniform structure with scarcely any framework ex-

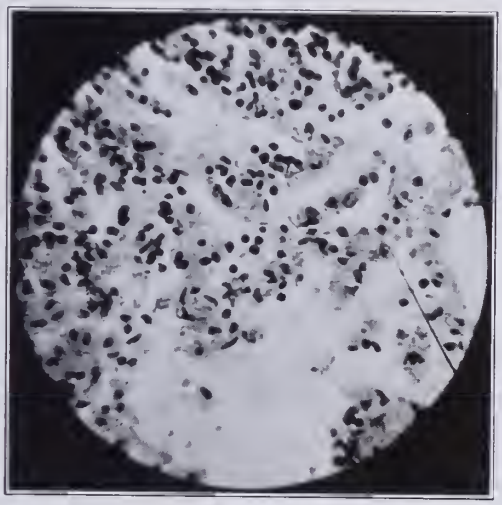

Plate 1. Low power magnification (hematoxylin-eosin) showing structure of tumor.

cept that provided by a few capillary vessels. (Plate 1). There are throughout many round cells with scanty cytoplasm and large dark oval nuclei. (Plate 2). These are very much of lymphoid type. There is some variation in the size of these cells and the smaller ones show dense regular oval nuclei; the larger ones show more cytoplasm, sometimes pinkish, and their nuclei are less regular and frequently reticulated with deeper staining granules. Some mitoses are noted. These cells all appear to belong to the lymphoid type. Very rarely a larger cell with a large pale vesicular nucleus is noted. These probably are of reticulum type but the neoplasm is

very decidedly one of lymphoid cell structure. No true giant cells are noted, nor are there any true Hassal's bodies. The tumor cells are actively infiltrating lung, pleura, pericardium and diaphragm. No distant metastasis were found. These findings substantiate malignant properties and the growth was regarded as a lymphosarcoma of thymic origin. Microscopic study of a mesenteric lymph node shows lymphoid hyperplasia with retention of follicle structure and no invasion of the capsule.

PATHOLOGICAL DISCUSSION

That there are a variety of neoplastic growths originating in the thymus gland is well recognized. Symmers[2] in a series of twenty-five cases describes five different types. When Hodgkin's tissue is excluded it seems that only three distinctly different varieties occur. One, an epithelioma; one a lymphocytoma, and one which appears to be a combination of these two. Since several tumors have been described showing the combined cell type, it has been considered with more favor that there may be a common cell ancestor for all cell constituents of the gland. Differences of opinion have existed on this

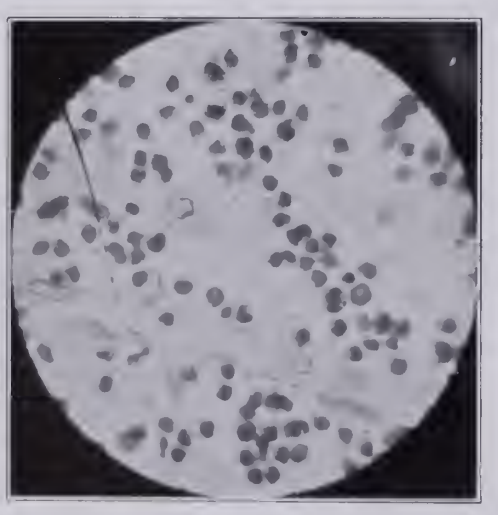

Plate 2. High power magnification showing large nucleii of round cells, and sparse stroma.

point and have occupied some attention (Evert[9]). Certain students believe the thymic cells have all originated from a reticulum cell that has descended from epithelium of the third bronchial clefts. Others believe this is only true of the reticulum and Hassal cells and that the lymphoid cells of the gland cortex are true lymphocytes of mesodermal origin that have infiltrated the gland reticulum. Studies by Ischii[10] have led him to believe the first mentioned theory.

Regardless of opinions as to histogenesis, there are as stated:

(1) A lymphocytoma or lymphosarcoma in which the growth is composed entirely of lymphoid cells.

(2) An epithelioma in which the growth is composed of epithelium reticulum cells.

(3) A neoplasm composed of lymphocytes, epithelium reticulum and Hassal's bodies.

Whether or not the name thymoma should be retained is a debatable point. Obviously it is a name that needs further qualification in order to convey a definite opinion as to the type of neoplasm under consideration.

SUMMARY

A case of thymic malignancy in a female white child of five years is reported with clinical, laboratory, röentgenological and gross and microscopic pathological findings. A review of American literature, and abstracts of European literature are presented. This case cannot be said to have contributed in any appreciable way to the therapy of this condition, although reference may be made to the occasional use of deep x-ray therapy in such a condition. This was not done in our case. We feel that the clinical awareness of the anterior and superior mediastinal syndrome may be demonstrated and further interest aroused. No attempt is made to discuss the various histogenic theories or to enter into pathological debate.

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PLANS FOR HANDLING TUBERCULOSIS IN THE VIRGINIAS*

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CONTROLLING the source of infection is recognized as the chief problem in the administration of a tuberculosis program. Therefore, the importance of discovering the early case and effectively segregating and caring for individuals with readily communicable forms of tuberculosis is obvious. Since the causative agent and manner of spread of the disease are definitely known, health departments have a responsibility for widespread dissemination of this knowledge.

The health officer and private physician are the key people in a tuberculosis program. Their cooperation and help must be secured before the problem is dealt with. The health officer must bear in mind that many factors in the individual, such as: race, sex and economic level affect tuberculosis morbidity and mortality and that these elements must be considered in program planning. In Virginia, tuberculosis is a problem of such magnitude that from twenty to twenty-five per cent of the time of all local health departments is given to it.

In discussing the subject of tuberculosis control, no attempt will be made to present a review of the history of tuberculosis, but certain facts pertinent to its control will be discussed. Epidemiological and clinical investigations have been undertaken and conclusions drawn from these investigations which have resulted in the development of administrative procedures by state and local departments of health in an attempt to control tuberculosis and prevent its spread.

*Read before the State Health Conference, Morgantown, West Virginia, October 31, 1940.

THE AUTHOR

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The treatment of the individual case is extremely important, but from a public health standpoint preventing the spread of the disease is of greater importance.

Tuberculosis in the early stages can be cured, but this generally means long periods of hospitalization and a considerable outlay of time and money. It can be prevented and its spread controlled by the adoption of comparatively simple hygienic methods and a careful control of the excretions from the pulmonary and upper respiratory tracts.

Our program in Virginia is divided into five, more or less distinct, but closely related activities which I wish to discuss somewhat in detail.

1. The promptness of reporting new cases falls upon the private physician. There are definite factors which deter early and complete reporting, the main one being the lateness with which an individual presents himself for examination. One would naturally think that, with all the educational work lavished on tuberculosis in the last twenty years, even the unenlightened of our population would know that productive cough, hemoptysis, loss of weight, afternoon elevation of temperature, pleurisy, and digestive disturbances require that a very careful physical examination be made to determine their origin. A never ending campaign should be

designed to see that all familial contacts and other persons of intimate exposure reach a competent physician for examination and chest x-ray. It is amazing to discover that the first report of many cases of tuberculosis reaches the health departments through death certificates.

Tuberculin testing has a definite place in the tuberculosis control program. It can be advantageously used in screening contacts and suspects. The prompt x-raying of all positive reactors is important and should not be neglected. Our experience in examination of large numbers of elementary school children in Virginia shows less than one-tenth of one per cent of them suffering from clinical forms of tuberculosis. We believe that wholesale tuberculin testing of public school children is a wasteful expenditure of time and money. A much greater result may be obtained by expending the same efforts in the adult population.

DIAGNOSTIC CLINIC SERVICE

2. Diagnostic clinic service is carried on by means of two mobile x-ray units, each staffed with a clinician, technician and clerk. The regulation 14″ x 17″ chest film is used. Approximately 10,000 individuals are x-rayed annually by these two units. A written request from the family physician is prerequisite to examination in the clinic. A nominal charge of two dollars for stereoscopic films and one dollar for flat films is made. About seventy-five per cent of the patients attending these clinics are unable to pay this fee. The expenses are usually met by local tuberculosis associations. These clinics are consultative in nature and every effort is made to have physicians accompany their patients to the clinic to discuss and review the findings with the clinician.

3. Field nursing service is a very important part of our tuberculosis program. A staff of eight field nurses, attached to the central office, are responsible for tuberculosis control work in the unorganized counties. The health officers are responsible for the control in their counties, and one-fifth of the nurses' time is given to this program. They have the responsibility of promoting, arranging and assisting with the clinics. It is also their duty to carry out the follow-up instructions made by the clinician. A complete report is delivered in person by the nurse to the family physician of all positive cases that require treatment.

4. Hospitalization: A program to control tuberculosis cannot be successful without adequate hospitalization facilities to care for open cases of tuberculosis. We have a total of 1,039 state beds and 592 municipal beds. Approximately one and one-half beds are available for each annual white death, but I regret very much that this is not true for our Negro population. Approximately one-half of the state beds are entirely free for indigent cases. For the remainder, a charge of one dollar per day is made in the white institutions and fifty cents per day in the colored institution. There is a pressing need for additional free beds as it is necessary for patients to wait from six to eight months before they can be admitted as free patients.

The municipal sanatoria are subsidized by the state. They are required to meet certain standards set up and enforced by the State Health Department. Twenty per cent of these beds are available for non-resident cases living outside of municipal areas.

Children with non-infectious forms of tuberculosis are cared for in specially equipped buildings located in two of our sanatoria. There has been a noticeable decrease in the number of applicants for these beds in the past few years.

VIRGINIA'S COLLAPSE THERAPY PROGRAM

5. Collapse Therapy: In July, 1938, Virginia began a state-wide surgical collapse therapy program. We were immediately confronted with the problem of the lack of proper facilities to give treatment outside of cities. To supply this need, postgraduate courses in pneumothorax at the tuberculosis institutions were offered free of cost to any physician interested in this type of medical practice. This group and those already doing

pneumothorax served as a nucleus for starting the program. In order to avoid complications and to simplify the setup it was deemed advisable to operate clinics in local hospitals, these clinics to be financed through their business office; the clinician to be selected by the hospital staff and approved by the State Health Department. A simple contract was prepared whereby the hospital agreed to furnish pneumothorax treatments at a monthly rate of $7.50 per patient, regardless of number of refills, including an overnight stay in the hospital if any accident occurred during the administration of treatment. Only hospitals having a fluoroscope, gravity pneumothorax apparatus and sterilization equipment were contracted. In areas where there were no hospitals private physicians were selected who had been approved by the local medical society. To date, we have fifty-four stations in operation with 482 patients in attendance. Since the beginning of the program 223 cases have been discontinued, making a total of 705 patients who have received treatment.

FINANCIAL ARRANGEMENTS

The financial arrangement between the physician and the hospital has been left entirely in the hands of the physician and the hospital. Only indigent patients are cared for in these clinics. The refills average intervals of about ten days. They are not a burden to either the physician or the hospital. This arrangement seems satisfactory to all parties and permits an easy billing and accounting as payment is made monthly on the number of patients rather than on the number of refills. Practically all of our patients are referred from the sanatoria. A very simple system of assigning these patients to their nearest station is used. Two weeks prior to patient's discharge from the sanatorium the medical director supplies the central office with a brief history of patient's pneumothorax treatments including amount of air and manometer readings before and after the last refill. This information is relayed to the family physician with a letter advising him that we can arrange for the treatments at a clinic if his patient is unable to pay the usual charges made by private physicians for this service. This arrangement has also worked satisfactorily with very few complaints from all the parties concerned; namely, the hospitals, physicians and patients.

Undoubtedly, some of these patients could afford to pay the fees charged by private physicians but we believe this number is small. Every effort is made to encourgae patients to patronize private practitioners should their economic condition change during the course of treatment.

The absence of adequate operating room facilities in our sanatoria has necessitated arrangements for major surgery in general hospitals staffed with thoracic surgeons. Two state-owned general hospitals and five privately-owned hospitals are used for this purpose. All candidates for surgery undergo preliminary study in the sanatoria before being admitted to general hospitals. This policy has two desirable features: First, the surgeon has the benefit of advice and consultation of internist; and secondly, unsuitable cases are weeded out without the expense of admittance to general hospital.

During the past year the following operations were performed:

107 patients*	—	182 thoracoplasties
60 patients	—	63 pneumonolyses
11 patients	—	12 phrenics
3 patients	—	3 apicolysis
1 patient	—	1 pneumonectomy
4 patients	—	4 bronchoscopic examinations
3 patients	—	unsuitable
Total: 189 patients	—	261 operations.

The development of a state-wide program for surgical treatment of tuberculosis has given new momentum to tuberculosis work in Virginia. It has made generally available the most modern, scientific and hopeful therapy yet found for a large group of tuberculous people.

From a public health standpoint, it has meant the changing of many positive sputum cases to negative ones, thereby reducing the number of infected contacts. Economically, it has meant a greater turnover in sanatorium

*4 patients died.

beds, for many pneumothorax patients formerly kept in the sanatorium for long periods now are being discharged more promptly in care of one of our local stations. For the patient, it means shorter hospitalization and an earlier return to family and work. These are psychological factors that have great influence in improving the patient's morale.

SPECIAL STUDIES

For some time we have felt the need of a rapid inexpensive method for the mass x-raying of large groups of individuals. Paper films, developed by Powers X-ray Products, Inc., have been used for this purpose and have proven satisfactory. Seven hundred and fifty to one thousand individuals can be examined daily at a cost of seventy-five cents per patient. This type of examination brings to light many unsuspected cases of tuberculosis and has a very definite place in a state program. In one tobacco factory, with 1,200 employees, twenty-two clinical cases of tuberculosis were found. All of these had consulted a physician within the year for a great variety of complaints but none of them had chest x-rays nor had any diagnosis of tuberculosis been made. It becomes increasingly evident that many cases of early tuberculosis are undetected by routine physical examinations. Substitute an x-ray film for the stethoscope and the present ratio of eight moderate or far advanced cases to one minimal case now being admitted to our institutions will be reversed.

Development of a miniature celluloid film using photoröentographic technique seems destined to replace paper and revolutionize the x-ray procedure.

We have found that a yearly research problem does much to keep a program young and virile. This year, in cooperation with our Bureau of Maternal and Child Health, arrangements were made to do routine chest x-rays on an unselected group of prenatal and postnatal patients. Two hundred and fifty-one individuals have been examined and twenty-two positive cases found. These findings, alarming to say the least, have resulted in a plan to provide sanatorium care for prospective mothers, with delivery service and placement of baby. We believe that this service will further accelerate the declining tuberculosis rate in the Old Dominion.

Problem of Magnetic Mines

In a discussion of science and war the regular London, England, correspondent of *The Journal of the American Medical Association* says in the February 15 issue that whereas the Germans had spent eight years following its invention in endeavoring to find a means of combating the magnetic mine, the British found the solution in eight weeks.

The correspondent's report concerns a broadcast by Sir William Bragg, former president of the Royal Society, on the subject of Science and War. Sir William said, the correspondent reports, "that the war had been called a scientists' and engineers' war. When people saw the damage it was natural for them to curse scientists and engineers for their devilish inventions. But science was knowledge about the world around us, which scientists were trying to increase. They could not control the use made of inventions.

"When war threatened, the Royal Society made a register of our scientists—an action never taken before. The results were interesting. We had about ten thousand scientific researchers, of whom sixteen hundred were chemists, one thousand physicists, five hundred mathematicians and seven hundred zoologists. Fifteen hundred were engaged in medical research. The remaining three or four thousand scientists were employed in the universities and technical colleges. Our trouble was that we had not organized our scientists for war. Apart from a small band in service departments, our scientists were engaged in peaceful occupations, whereas the best German technicians had been drawn in for many years. But fortunately the British were good at improvising in an emergency. He could not give away any secrets, but he could quote from a German source. In his book, Captain Dove, one of the prisoners on the *Graf Spee*, related what Captain Langsdorf of that ship said: 'We invented the magnetic mine eight years ago and for eight years have been trying to find the antidote without success. Now the British Navy has to start where we began.' But the British Navy found the antidote in eight weeks, not eight years."

APPENDICEAL ABSCESS: A METHOD OF TREATMENT*

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An appendiceal abscess is a localized, circumscribed collection of pus in the region of the appendix, arising from an infected ruptured appendix, walled off by omentum and intestines, and separated from the general peritoneal cavity by this barrier. It is frequently adherent to the anterior abdominal wall but more often lies deep in the right iliac fossa or in the pelvis and is not accessible, except by opening the general peritoneal cavity. It may be well defined and easily palpated or it may be discovered only after the abdominal cavity is opened.

Appendiceal abscess is a frequent complication of appendicitis and one which has not been given as much attention as the other complication, generalized peritonitis.

Much has been written and many articles are constantly appearing in the current literature on appendicitis and its complications but there is surprisingly little on the treatment of the acute abscess resulting from a ruptured appendix. It is second only to diffuse peritonitis in its mortality rate. Lehman and Parker, Miller and Turner, Orr, Gile, Collier and Potter, and others stress the conservative treatment of this condition and excellent men throughout the country feel as they do and operate only because of "unmistakable indications for surgical intervention, such as acute intestinal obstruction or threatened perforation of the abscess into the abdominal or rectal wall." We do not know how they can always tell when an abscess is about to perforate. On the other hand, Kirtley and Daniel, Davis, Boyce and McFettridge, and others are less conservative and think immediate surgery is indicated in most cases, while another group with equally large experience feels that every case of appendicitis, whatever the stage, or however bad the condition of the patient, should be operated on immediately. Others state if an abscess forms it must be drained, if possible, by the extraperitoneal route.

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We are neither as conservative as some nor as radical as others but take the middle road, feeling however, that in almost every case surgery is indicated after the abscess is well defined. This is borne out by the fact that in 20 years only four-tenths of one per cent of our cases of appendiceal abscess have been treated without operation. At the present time our tendency is to operate as soon as a definite abscess is formed. Frequently we will treat a patient with an abscess for 24 to 48 or 72 hours by combating dehydration and giving morphine, but when we feel the barrier is well established our tendency is to operate rather than to wait for resolution of the mass. No doubt we are influenced by the death of four patients from ruptured abscesses; ruptured while undergoing conservative treatment.

In the diagnosis of appendiceal abscess several factors must be borne in mind. A septic mass in the right lower quadrant may or may not originate in the appendix. The disappearance of the mass may mean the patient has absorbed the septic material, it may have ruptured into a loop of bowel or it may have perforated into the general cavity

*Read before the Association of Surgeons of the Chesapeake and Ohio Railway, White Sulphur Springs, West Virginia, November 8, 1940.

with widespread peritonitis. An acute appendix, wrapped in omentum may be felt through the abdominal wall, be diagnosed as an appendiceal abscess and under conservative treatment, may disappear, but the next case may go on to perforation, generalized peritonitis, and past the stage of cure by operation.

The presence of a mass does not necessarily mean an abscess, for acutely inflamed loops of intestine, densely adherent, may give the impression without actually being an abscess.

TWENTY-ONE YEAR'S STUDY

I have reviewed the cases of appendiceal abscess in the Lexington Clinic over a period of 21 years, from 1920 to 1940. I will not attempt to discuss anything more than acute appendiceal abscess, leaving the subject of acute appendicitis, local and generalized peritonitis, and other complications, to longer and more exhaustive studies on the subject.

In reviewing our cases, as far as possible, I have included only those in which there was a definite abscess proven by operation. In a few cases the appendix was neither seen nor felt at the time of drainage and was not subsequently removed. Clinically, however, these cases fulfilled all the requirements necessary for inclusion in this group. No cases of diffuse peritonitis are included unless there was a definite circumscribed mass present.

In 21 years we have had 235 cases of appendiceal abscess which have come to operation. We have had 37 deaths in these cases, a mortality rate of 15.7 per cent. In the past five years, 1936 to 1940, we have had 47 cases with one death, a mortality rate of 2.1 per cent.

We have learned several things about the treatment of abscesses over these 21 years. From 1920 until 1925 an attempt was made to remove the appendix if at all possible. This plan, however, was discarded and only occasionally since then has the appendix been removed, often with disastrous results. Some were drained by reflecting the peritoneum and draining the abscess without opening the abdominal cavity and those abscesses attached to the anterior abdominal wall were simply incised and drained.

We attribute the great reduction in our mortality to a simple physiological principle devised by the senior surgeon of our group—Dr. W. O. Bullock. To release the pus in an abscess without contamination of the general peritoneal cavity is the basis of the treatment. This was reported by my colleague Dr. Francis M. Massie, in 1938, and is known locally as the Bullock method. It consists merely of breaking the operation into two stages.

A careful search of the literature does not reveal a description of this method elsewhere. Arnhein and Neuhof have recently described a somewhat similar procedure but have missed our main point, two stages to the operation.

DRAINING INFECTED AREA

The brain and chest surgeons have for years resorted to two stages when draining an infected area, the first stage to wall off and seal the surrounding tissues from the contamination and the second to drain it. The deep-seated appendiceal abscess which is not adherent anteriorly and cannot be drained extraperitoneally behind the cecum or by way of the pouch of Douglass or rectum is the one to which this method applies. In our method of treatment an incision is made directly over the abscess and the peritoneum carefully opened. If the abscess is unquestionably adherent, it is drained. It is best at this point to explain that this is what we mean by a one stage drainage. If, however, the abscess is not adherent, a strip of vaseline gauze is placed completely around it and both ends brought out through the abdominal wound. In 24 to 48 hours there is a firm wall of adhesions between the abscess and the peritoneum of the anterior abdominal wall and it can be drained by simply pushing a forcep or pair of scissors into the most prominent part of the mass within the loop of gauze. There is no peritoneal contamination and the entire drainage tract is extraperitonealized. We have lately placed a Penrose drain directly over the abscess and brought it out in the middle

of the vaseline gauze. At the second stage, under light gas anesthesia, this is removed, the tract is well visualized, and the abscess can be easily opened. In 25 cases treated in this manner we have had no deaths. In the past year we have had 11 cases of acute abscess and 10 of these have been operated on by the two stage method. All of them have recovered. The eleventh case was treated by one stage drainage because the mass was adherent to the abdominal wall. He died 10 months later of multiple liver abscesses after developing generalized peritonitis. Sulfanilamide, Wangensteen drainage, and blood transfusions merely prolonged his life and changed the cause of death from peritonitis to pylephlebitis. This case illustrates vividly a condition we noted before 1936. Many of the abscesses which we thought were adherent to the peritoneum proved not to be and in several there was a collapse of the abscess and subsequent leakage due to separation of the barrier.

MORTALITY REDUCED

Reduction of mortality from approximately 20 per cent to two per cent cannot be dismissed lightly. The cause of death in the patients treated before 1936 was in practically all cases a rapidly spreading fulminating peritonitis. Before operation the patients did not have peritonitis but a localized accumulation of pus. It is obvious that the operation was responsible for the spread of the infection and the improvement in technique the cause of the reduction in the death rate.

In 235 cases since 1920:

MORTALITY 1920-1940

Years	Cases	Deaths	Mortality
1920-1925	65	13	20 per cent
1925-1930	64	15	21.8 per cent
1930-1935	59	8	13.5 per cent
1935-1940	47	1	2.1 per cent
Total	235	37	15.7 per cent

One hundred and seventy-two have been operated on in one stage, merely incision and drainage. There were 33 deaths or a mortality of 19.1 per cent. It is a great temptation to pack off the intestines and open a small abscess and suck out the pus in one stage, and we have done it knowing the greater safety in the two stage drainage. It is also true that an abscess may appear to be well walled off and adherent to the peritoneum. It is only after the patient develops distention and fever that we know it was not adherent.

In 38 cases the appendix was removed in addition to draining the abscess with four deaths, a mortality of 10.5 per cent.

MORTALITY ACCORDING TO AGE

Age	Cases	Deaths	Mortality
Under 12	43	9	21 per cent
Over 50	43	13	30 per cent

Since 1936 we have had 47 cases, 22 of which were adherent to the anterior abdominal wall and could be opened and drained and 25 were not adherent and were treated by the two stage method I have described with one death in these 47 cases.

We are not convinced that the operative treatment of appendiceal abscess is correct and our minds are not closed on the subject.

MORTALITY ACCORDING TO TYPE OF OPERATION

	Cases	Deaths	Mortality
Removal of appendix with drainage	38	4	10.5 per cent
One stage drainage	172	33	19.3 per cent
Two stage drainage	25	0	0 per cent

Lehman and Parker, in reporting 181 cases of appendiceal abscess treated conservatively, were able to avoid operation in 65 per cent with no deaths and in their forced operations a mortality of 6.2 per cent. Stanton is convinced the mortality can be lowered by deferring operation. Kirtley and Daniel, however, in 118 cases of appendiceal abscess, had five deaths; immediate operation in 63 cases and delayed treatment in 55. All of the five deaths occurred in the group of delayed operations.

Operative mortality is variously reported from four per cent to as high as 52 per cent.

We feel that to drain every appendiceal abscess immediately without sealing off the peritoneal cavity invites disaster. With the operation separated into two stages and the infected area completely walled off, we believe the patient's chance for recovery is better than with any other treatment.

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AVULSION OF SCAPULA AND RIGHT UPPER EXTREMITY WITH RECOVERY *

By E. BENNETTE HENSON, M. D., F. A. C. S.
Charleston, West Virginia

PATIENT's right upper extremity was caught in a belt on a machine while at work in a coal mine, about 9:00 p. m., January 2, 1940, and he was brought to the hospital at midnight in an ambulance direct to the operating room. Dr. A. E. Glover at Van, West Virginia, who had rendered first aid, had telephoned to have the operating room ready to complete the amputation of the right upper extremity. Several days later the patient gave this version of the accident:

"I was knocking ice off the conveyor belt with a monkeywrench and in some manner my hand got caught in the revolving wheel and I tried, pulling with all my power, to pull my hand out and brace myself against the bench, but when it got up to my elbow I lost consciousness for a few moments, but I evidently pulled myself loose. I then walked up twenty steps, turned off the electric switch, and then went about two hundred feet to find my foreman and asked him for a cigarette."

The foreman states that he then sat down and smoked the cigarette and there was very little bleeding. Dr. Glover, who saw him within twenty minutes of the accident, gave him one-half grain of morphine, but stated that he was not in much shock at the time.

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A detailed search of medical literature may reveal a similar case of that which is now being reported. A casual review has not shown a single case of avulsion of the scapula and the entire right upper extremity with recovery. This patient presents some remarkable features which are worthy of recording.

PHYSICAL EXAMINATION

Before anesthetic was given the blood pressure was 90/60; pulse, 120, and respirations, 28. Right lung thought to be collapsed. Head: Scalp clear. Eyes: Pupils were round, regular and equal, reacted to light and accommodation. Sclerae, clear. Ears and nose: External examination, negative. Throat:

*Presented before staff of Kanawha Valley Hospital, January 5, 1941.

Slightly injected. Chest: Diminished movement on the right side, also decrease in breath sounds, and vocal resonance. The left side

Fig. 1. The clavicle is intact. Note the depression due to absence of the pectoral muscles.

Fig. 2. A leather shoulder pad he devised in order to wear coat and give him balance.

movements were good, breath sounds vesicular. Heart: Normal rhythm and quality, no murmurs. Abdomen: Scaphoid, soft, no pain, tenderness, masses, fluid or hernia, no costovertebral angle tenderness. Kidney and liver not palpable. Extremities other than right arm negative.

PREOPERATIVE FINDINGS

Amputation of the right upper extremity by torsion. Scapula arm and forearm torn loose from body by revolving machinery. The right arm as well as entire scapula had been torn from the body, the acromioclavicular joint torn completely loose. The skin across the shoulder for about four inches was all that was holding the arm to the body. All

Fig. 3. Shows the excellent camouflage effect of the shoulder gadget.

blood vessels were thrombosed. The brachial nerves had evidently been avulsed high up. None were visible. The upper ribs were exposed and all muscle tissue stripped away. The attachments of pectorals and rhomboids were completely torn off from the ribs.

Under local anesthesia all the necrotic tissue was removed, and all thrombosed blood vessels that were found were ligated. The arch of the aorta was exposed. The wound was cleansed with saline and a large amount

of sulfanilamide powder forced into the wound. The skin was closed and a small iodoform drain put in a stab wound of chest. There was no muscle tissue left on right side of thorax. The ribs were completely stripped of all tissue and two of them were fractured. The right clavicle was intact and the skin was sutured loosely to avoid necrosis over the clavicle. No large blood vessel bled. No nerve ends were found. A most complete dissection had been accomplished by the accident.

FINAL DIAGNOSIS

Avulsion of the right scapula with its attachments.

Fracture right fifth and sixth ribs.

Right pneumothorax.

Recovery uneventful. In hospital for twenty-five days.

All necrotic tissue removed which was of the terminal tissue only. The arm, forearm, and hand appeared untouched.

COMMENTS

Several cases of avulsion of parts of an extremity have been encountered. In the "horse and buggy" days it was the loose rein and wild horse. Today it is power machines. The recovery and lack of shock is evidently due to the pain tracts being pulled apart first, probably at the moment he lost consciousness.

The total lack of bleeding is interesting. The collapse of the lung may have been due to actual tear at the apex which was exposed, or to the avulsion of the phrenic nerve.

SCHOOL HEALTH PROBLEMS*

By R. C. HOOD, M. D.
Washington, D. C.

"THE health of the child is the power of the nation." This Children's Bureau slogan used during the World War assumes a peculiar significance in the light of present-day events. In these unsettled times it is well to pause for a moment for thoughtful consideration of our national assets and of the ways and means of improving the health and welfare of a people living in a democracy.

The Surgeon General of the U. S. Public Health Service in an address last June on preparedness made this statement: "It is urgent now that the people of this nation be physically tough, mentally sound, and morally strong. If we are not, * * * we can leave our planes unbuilt and our battleships on paper. We shall not need them." The physically fit, mentally alert, and morally strong cannot be developed unless certain basic principles of health, nutrition, and training are instilled in the child in his growing years.

THE AUTHOR

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The recent White House Conference on Children in a Democracy emphasized the fact that concern for the child begins before his birth. It includes concern for his parents; it continues until the child reaches maturity. During the period of childhood it is possible to distinguish certain needs of the child as an individual and other needs which are identical with those of his family or his community.

There are many avenues of approach to be considered in a discussion of the health of children. Viewed chronologically there are several periods in the life of a child that have their peculiar health problems which relate

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intimately one to the other and which determine whether or not a child will reach adult life in the best physical condition.

A beginning on many of the problems relating to the health of school children can be made long before the child enters school for the first time. The chief objective of a school health program should, therefore, be to have the child enter school in the best possible physical condition. To accomplish this mothers should have good prenatal and delivery care and children should be under competent medical supervision from infancy to school age. During this preschool period the child's nutritional status is established and his health habits are developed. In families that have sufficient means to provide a well-balanced diet, attention should be given to any evidence of food deficiencies and idiosyncrasies. In families where the income is limited, a sound nutritional basis for feeding the infant and preschool child is of even greater importance.

PRESCHOOL PERIOD

During the preschool period the foundations of mental health are laid. Regular hours for sleep, for meals, and for elimination, avoidance of overstimulation, and the development of an understanding of the meaning of discipline and of proper social attitudes prepare the child for his years at school.

It is axiomatic that all immunizations against contagious disease should be given well before the child enters school and should not be deferred until just prior to that time. Children should receive immunization against diphtheria before the end of the first year and this should be followed by a Schick test in six months in order to assure adequate protection. Vaccination against smallpox should be performed before the end of the first year. Improved whooping-cough vaccine given during the preschool period is being more generally used and is believed to offer some protection. In communities with poor sanitation, children should be given typhoid vaccine before the end of the first year, and, of course, appropriate measures should be taken to improve sanitary conditions. Immunization with serum from persons who have recovered from measles is recommended only during epidemics, as the protection is of short duration. No satisfactory method of immunization against poliomyelitis or scarlet fever has as yet been demonstrated. If there is evidence of contact with tuberculosis a tuberculin test should be performed in early infancy.

Dental supervision and care should be given throughout the preschool period with special attention to the conservation of the first permanent teeth. All dental defects should be corrected before the child enters school. It is usually possible to attain a more satisfactory correction of the refractive errors and orthopedic disabilities when such corrections are made during the preschool period. Authorities agree that the best results are obtained when treatment for the correction of harelip, cleft palate, and clubfoot is given before the age of six months. Corrective measures of this kind when carefully planned and carried out should make it possible for every child to enter school in the best possible mental and physical condition. The development of a satisfactory school health program is, therefore, a prolongation of good health supervision and care during the prenatal period, at birth, during infancy, and during the preschool period.

SCHOOL HEALTH PROGRAM

The organization of the school health program presents many problems involving several phases which cannot be considered independently. For this reason it would be well to attempt to define certain phases more specifically. Health education has been defined as "the sum of all the experiences which favorably influence habits, attitudes, and knowledge relating to individual, community, and racial health." Health education is a term that covers a wide field and includes more than mere health instruction. "School health education is that part of health education that takes place in school or through efforts organized and conducted by school

personnel." This type of education is intimately related to public health education that takes place in the home community. School health service is defined as comprising "all those procedures designed to determine the health status of the child, to enlist his cooperation in health protection and maintenance, to inform parents of the defects that may be present, to prevent disease, and to correct remediable defects." The term school health service is used in preference to medical inspection because it refers to the technical services provided by medical, dental, psychiatric, nursing, nutritional and other specialists in cooperation with administrative officers and teachers. For this reason health programs that are organized as independent school services without relation to those of the local health department, the local dental and medical professions, the community recreation facilities, the hospitals, the clinics, and health and welfare agencies will not function adequtely in educating the child in the principles of health as well as in the use of health facilities. It should be the function of the school to educate the child to utilize in his daily life the health information he receives. It should not be the function of the school to provide any type of medical service, except in case of an emergency or as a demonstration, unless it is impossible to arrange satisfactorily for this service in the community. Where family income is so low that the needed medical services cannot be provided, such services should be arranged through the appropriate public or private health or welfare agencies.

DAILY HEALTH INSPECTION

The first and probably the most important, although often neglected, phase of health service in the school is the routine daily health inspection by the teacher. In many instances school teachers have not been sufficiently trained in recognizing deviations from normal health and incipient signs of disease or disability that should be referred to the school physician or nurse or to the family physician for advice. It should not be the objective of the school system to make physicians out of school teachers. Each teacher, however, should have knowledge of what constitutes good health in the child and should be prepared to note deviations in a systematic manner. She should be equipped to recognize, among other unusual signs, lack of vigor or alertness, pallor or flushing, lack of cleanliness or obvious skin disease, evidence of difficulty in seeing or hearing, discharge from eyes, ears, or nose, inability to breathe properly, decayed teeth and foul breath, poor posture, and muscular weakness. Such deviations should be brought to the attention of the school nurse or school physician if the school employs such personnel and should form a basis for discussion and appropriate action. Health problems discovered during the daily inspection should prove a constant source of educational material in teaching children the principles of good health.

For many years in some sections of the country school physicians and nurses have been employed to give a treadmill type of annual physical examination in which the principal objective has apparently been the recognition and tabulation of physical defects. As pointed out by Dr. George M. Wheatley, pediatric consultant to the New York City Health Department, this use of the physician as a defect finder has been commonly accepted. School authorities have measured the progress of the school health program in terms of the number of examinations made and defects discovered. Under this system a single physician or nurse has attempted to inspect—for the word "inspect" is more properly used in this sense than the word "examine"—large numbers of school children and to make decisions involving serious operative procedures often open to question. The school physician can be of much greater service to the school if his primary function is to serve as a health adviser to children, parents, and the school authorities on health problems. "A health problem challenges a physician and nurse for solution. A defect challenges no one but the statistician."

Serious doubts have been expressed recently as to the advisability of a routine yearly examination by school physicians of all the children in a school. As a medical adviser, the school physician is in a better position to assist in the solution of health problems through referring these children to an appropriate source for a more complete examination. It is increasingly recognized that parents should be present at the health examination performed by the school physician, at which time the health problems of the child are discussed and a plan made for their solution. In the past the school physician has been so busy conducting physical examinations and carrying on immunization programs that he has not always been aware of the broader health problems of each child. In the words of Dr. Don Gudakunst, former commissioner of health of Michigan: "Let us set up as our ideal not an examination in every school every year for every child with 100 per cent immunization by the school doctor, but rather let us set up as the goal to be reached that situation where every child will come to school well prepared for school and life, where every child will have been under the continuous supervision of competent physicians from before the time of birth. Let the school and the school doctors meet the challenge of teaching child, parent, and community."

ATHLETICS

The primary purpose of physical education in the school system is often distorted when emphasis is placed on improving the physical status of a selected few who participate in interscholastic athletics rather than on improving the physical condition of all children attending the school. Even under this system too little attention is given to the physical fitness of children in the adolescent period engaging in strenuous exertion. Too often sentimental reasons and school spirit encourage the adolescent child in a poor physical condition to attempt activities beyond his physical capacity that result in irreparable damage. The careful grading of exercise, work, and recreation in accordance with the child's physical capacity should be one of the important responsibilities of a good school health program.

A point in the school health program where health instruction closely relates to health services is in the field of control of communicable diseases. The daily health inspection by the teacher should make it possible to exclude children with incipient signs of contagion, as it should be generally recognized that no child who is ill should remain in school. However, false emphasis on perfect attendance and the use of the attendance record as a basis for the allocation of school funds to local political subdivisions often make it difficult to require that children who are ill should remain at home. Some method other than attendance should be found for the allocation of local school funds, and the cooperation of the local health departments and the medical profession should be continually sought in the enforcement of the quarantine laws.

EMERGENCIES

A planned program should be established in every school to meet emergencies occurring as a result of accidents or sudden illness that will provide immediate emergency care, notification to parents, transportation of children to their homes, and guidance to a source of treatment. The school should not assume responsibility for the care of victims of accidents occurring at home or during activities that are not sponsored by the school. The school should be equipped to carry out first-aid measures and emergency treatment of sudden illness, but prescribing medicines should not be considered sound school policy.

It is important in controlling communicable disease in school children to recognize that the health of the teachers and non-teaching personnel is equally as important as the health of school children. For this reason annual physical examinations should be required of all school teachers before entrance on their duties, and principals and supervisors should be constantly alert to recognize any

signs of incipient disease in members of their staff. Too often we hear stories of teachers with advanced pulmonary tuberculosis continuing their teaching duties and acting as a focus of infection for large numbers of susceptible children.

COORDINATION OF SERVICES

The health and medical services in the school should be actively coordinated with public and private programs for the correction of remediable defects in children whose parents cannot afford to pay for their treatment and care. An outstanding example of this type of program is seen in the services for crippled children administered by the Department of Public Assistance in West Virginia. Under this program large numbers of children whose parents cannot afford to pay for this service are given diagnostic and treatment services by qualified orthopedic and plastic surgeons and nursing care and physical therapy in clinics and hospitals and in their own homes. This service, provided from public funds and subsidized by the Federal Government through title five, part two, of the Social Security Act, has been restricted in a large measure to provisions for children suffering from disabilities requiring orthopedic and plastic surgery. The need for care for these more obvious types of crippling conditions has long been recognized and West Virginia was one of the first states to take appropriate legislative action to meet this need. There are, however, throughout the state, large numbers of children with other types of crippling conditions in need of care for whom no provision is made from public funds. These include children with remediable defects of vision and hearing, diabetes, and cardiac disease. The adult physical rehabilitation services provided by the State Department of Public Assistance in West Virginia during recent years have amply demonstrated the sound economic basis for this service. I am informed that the provision of this service has resulted in vast savings in public funds and at the same time has made it possible for a majority of those given this service to return to private employment and to lead normal and useful lives. This is a record of which the state should be justly proud.

The careful administration of an expanded program of services for crippled children that would include other types of crippling should effect similar savings and make it possible for large numbers of children eventually to take their places as self-supporting and useful members of society. I do not wish to leave this idea without expressing a hope that academic and health education for the crippled child in the hospital and in his own home will become an accepted responsibility of the State Department of Education. The physical restoration services provided from public funds for crippled children under the state program is work half done unless the crippled child is also given the advantages of academic and health education which will equip him to take his place as a useful member of society.

SCHOOL ENVIRONMENT

The responsibility for the maintenance of a safe and healthful environment for children attending school clearly rests with the boards of education. State laws require that a child shall attend school up to a certain age. Failure to attend is punishable, yet it is easy to see how some parents might with good logic take exception to the environment in which some children are expected to obtain their education. The school environment covers a wide range. It includes, among other things, the location of the school and the construction of the school building, the proximity of the school to industrial areas, liquor stores, railroads, a noisy neighborhood, or heavily traveled streets, and accessibility to the homes of the students. It includes the safe operation of school busses, provisions for comfortable heating and ventilation, illumination adequate in quantity and quality, clean and sufficient toilet and washing facilities, safe drinking fountains supplying pure water, and acceptable provisions for fire protection. It includes proper cleaning and dusting of desks, rooms, and hallways, comfortable seating,

facilities for recreation and rest, and attention to the control of communicable diseases in teachers and all other personnel as well as pupils.

The mental and social environment of school is of equal importance. It relates to teaching methods, promotional systems, the duration of teaching periods, and matters affecting the mental and emotional health of the child. When it is understood that the environment in its broadest sense includes all these things which influence the mental and physical health of the child, more attention will be given to some of these neglected details.

Yesterday I discussed some of the problems of school environment with the elementary school teachers and pointed out that with our present knowledge much could be done to improve environmental defects.

BALANCED PROGRAM ESSENTIAL

No school health program will succeed unless it is a planned and balanced program that gives appropriate weight to the importance of each school health problem. For this reason great care should be taken to integrate properly the various phases of a health program in terms of service to the individual child. As was pointed out in the recent White House Conference on Children in a Democracy, "the child receives or should receive services from many individuals, groups, and agencies in addition to his own family. Each has its special task and none can be performed successfully without regard to the others. However, the best intentions of one group have often been nullified by ignorance of the work of another or by the interference or inefficiency of others. Too often people have failed to recognize the simple truth that the child cannot be broken up into parts—one for the parent, another for the teacher, one for the public official, another for the playground, and still another for the church. The child is an indivisible whole as he grows from infancy to manhood and must be planned for and served as such." Because the child must be considered as a whole, it is essential to the success of any school health program that the services concerned with the health of the child should work together closely and that all persons providing these services should completely understand the part each is expected to play.

Because the health of the child is one of the primary objectives of any educational plan, many organizations have given thoughtful consideration to the development and integration of a school health program. A tentative statement of school health policies has been recently formulated by representatives of eight nationally recognized groups consisting of the American Association for Health, Physical Education and Recreation, the American Academy of Pediatrics, the American Medical Association, the American Public Health Association, the American School Health Association, the Educational Policies Commission, the Joint Committee on Health Problems in Education of the National Education Association and American Medical Association, and the National Organization for Public Health Nursing. The findings of these groups are being currently published in the fall issues of *Hygeia*, the health magazine of the American Medical Association. They are worthy of our thoughtful consideration as they represent the joint thinking of many persons who have had long experience in this field.

RECOMMENDATIONS

1. Provide a healthful environment, including attention to the arrangement of the school program and the social and emotional tone of the classroom as well as attention to school sanitation.

2. Have a planned program for the care of accidents occurring at school and for sudden sickness.

3. Have a planned program to assist the community program for the prevention and control of communicable disease.

4. Provide a planned, graded program of health instruction giving opportunities for experiences through which pupils will develop skill in healthful living and accumulate

scientific knowledge relating to the acquirement and improvement of health, causes of certain diseases, the way diseases spread, and known methods of prevention.

5. Encourage periodic health examinations, develop a plan whereby such examinations will be obtained, and keep a cumulative record of the findings and recommendations.

6. Give special attention to those in need of medical or dental care through a follow-up program which will, where necessary, guide pupils and parents to sources of medical and dental treatment.

7. Provide special education programs for handicapped pupils, either by adapting the program of the regular class to individual pupil needs or by providing special classes or special schools.

8. Provide supervision and in-service training for teachers and place specific responsibility in the hands of some person especially qualified in education and in school work for coordinating all school health activities and for relating these to the community health program.

The problems of school health are manifold. We now know much better how to proceed in the attainment of sound objectives. Every child in a democracy has a right to health measures planned to meet his individual needs. No plan or system working independently can fully meet these needs. The educational, health, medical, dental, nutritional, nursing, and social services, both public and private, must join in a coordinated plan of action if this result is to be attained.

METASTATIC MALIGNANT NEOPLASM OF THE EXTERNAL AUDITORY CANAL AND MIDDLE EAR: REPORT OF CASE

By H. R. JOHNSON, M. D.
Fairmont, West Virginia

MALIGNANT growths in the external auditory canal and middle ear are seen so rarely by any individual otologist as to make the reporting of such cases mandatory on the part of those who encounter them.

Schall reports from the Massachusetts Eye and Ear Infirmary the incidence of malignancy of the ear as one in six thousand ear cases seen in that institution. Joseph C. Beck in discussing Schall's paper reports having seen two cases of canal and middle ear malignancy in thirty-five years private practice and public clinics. Dr. Pfahler of Philadelphia, who has had an extensive experience with malignant conditions, could find in his records only four cases that came under his observation. Coats of Philadelphia says: "No physician sees enough of these cases in a sufficiently short period to elaborate the technique of the management of the condition."

It is obvious from the testimony of men in our large medical centers engaged in the practice of otology that this is a very unusual location for malignant growths. The type of malignancy found in this location is: (1) Squamous cell carcinoma, occurring in 65 to 70 per cent of cases; (2) adenocarcinoma which seems to be next in point of frequency, and (3) lymphocarcinoma and endothelioma. The origin of the neoplasm under consideration may be primary or it may be a secondary metastatic growth. From the reports available which make no mention of a previous malignant involvement at some remote point from which the ear subsequently became the site of a metastasis, the inference necessarily follows that most, if not all, of these cancers are primary in origin.

THE AUTHOR

Dr. Johnson, graduated University of Maryland School of Medicine, 1892; F. A. C. S.; American Academy of Ophthalmology and Oto-Laryngology; Past President of the West Virginia State Medical Association.

The symptoms of malignant aural neoplasms, all of which may not be present in a single case, are: (1) Pain. This may not be a prominent symptom in the early stages and may not be noticeable until the tumor has advanced to the stage where it makes pressure on the surrounding structures; but the pain, when once established, becomes constant, and in the advanced stages of the disease can be relieved only by the constant use in gradually increasing doses of opiates. If the growth is not too far advanced the pain may be controlled for a time by deep x-ray therapy. (2) On examination a growth is found in the external auditory canal having the appearance of an ordinary polypoid growth found in chronic middle ear suppuration. The tumor, however, is on examination found to be of denser consistency and tends to bleed easily when manipulated or palpated with an applicator. (3) The patient may give a history of a severe spontaneous hemorrhage from the ear, and this is a very significant symptom. (4) Seventh nerve paralysis may occur when pressure erosion of the surrounding bony canal through which the nerve passes takes place, causing pressure on the nerve.

Diagnosis must be made from the benign aural neoplasms. The history must be carefully taken and studied. A growth in the canal of the ear, of firm consistency, with history of profuse hemorrhage, or tendency to bleed on slight manipulation; facial palsy, and the laboratory report on the growth make definite the diagnosis.

TREATMENT

The consensus of opinion, as to treatment, is complete surgical removal of the neoplasm and surrounding structures when that is possible. In far advanced, inoperable cases, the pain and hemorrhage may be controlled by radium and deep x-ray therapy. The surgery in this condition must be thorough, requiring complete tympanomastoidectomy with removal of the anterior canal wall and zygomatic process. The operative results, with follow-up x-ray and radium treatment have been encouraging, as sixty per cent clinical cures have been reported over periods ranging from two to five years. All clinicians are agreed that it is impossible to determine the extent of growth from aural examination, or to get an exact picture of the limits of the tissue involved by x-ray films. Exploratory operation alone will give this information.

CASE REPORT

The case I am herewith reporting is unique, even in this rare condition, in two particulars: First, its metastatic origin, and second, the histopathological character of the growth:

E. R., male, age 46. Referred by Dr. J. J. Jenkins of Farmington, W. Va., November 18, 1940, for profuse hemorrhage from the right ear.

The patient reported that he had had a kidney removed February 14, 1940, by Dr. Carl J. Carter, for cancer. For the past six weeks he has had a severe pain in the right ear, continuous, but much worse at times. Six months ago he had paralysis of the right side of the face. On the day before he was referred he had very profuse hemorrhage from the right ear which was controlled with difficulty.

Examination: Paralysis of the right facial nerve. The right external auditory canal was completely occluded with a growth that looked very much like the ordinary aural polyp frequently seen in chronic suppurative otitis media. On palpation with a dull probe it was found to be much harder than a polyp; there was an ulcerated area on the internal surface of the growth, which bled freely on slight manipulation. There was also a definite hard brawny enlargement over the zygoma extending forward to the posterior border of the malar prominence. We made a clinical diagnosis of malignant neoplasm based on the foregoing history and present symptoms, both subjective and objective.

A specimen was taken from the growth and sent to the Bloodgood Laboratory for microscopic diagnosis. The report was made by Dr. Cohen. The growth in the kidney was hypernephroma of very virulent type. The specimen taken from the ear in this case was exactly the same micropathologically as the growth from the kidney. The final diagnosis was hypernephroma of the right ear secondary to the same condition in the kidney.

As this case was considered inoperable on account of the extensive involvement and being of metastatic origin, deep x-ray treatment

was undertaken. After two exposures the pain and hemorrhage ceased, and the last report from the patient stated that he had returned to work. How long and how much he will be benefitted by this treatment we are watching and awaiting with intense interest.

GONORRHEAL OPHTHALMIA IN A PREMATURE INFANT TREATED WITH SULFATHIAZOLE

(Case Report)

By J. LEWIS BLANTON, M. D.
Fairmont, West Virginia

B. K., a premature infant, weighing three pounds, nine ounces, was admitted December 5, 1940 to the Fairmont General Hospital three hours after home delivery. The infant was cold and cyanotic on admission. Silver nitrate, one per cent solution, was immediately instilled into the eyes, which showed edematous conjunctivae with some inflammatory signs interpreted as resulting from the use of silver nitrate at the time of delivery. Routine premature care and oxygen therapy was started. Thyloquinone (Squibb), two mgm., was given the first 24 hours and breast milk by gavage was started at the end of 18.

The rectal temperature rose from 96 to 99 degrees and became stabilized between 98 and 100 degrees at the end of 48 hours. The baby's condition seemed satisfactory except for the persistent conjunctivitis. Smears were negative until December 9, 1940, when numerous intracellular diplococci were reported from each eye.

Strict isolation with special nurses was immediately instituted. Dr. Joseph S. Maxwell assumed supervision of the eyes, ordering argyrol, 10 per cent solution, instilled into each eye after hourly irrigations with boric acid solution. Sulfathiazole gr. one-half was given in each gavage feeding every three hours. The source of our breast milk supply left the hospital at this time and similac was substituted.

The following day little change was noted in the condition of the eyes but at the end of 48 hours there was definite improvement and at the end of 72 hours the discharge had ceased and a negative smear was obtained. However, treatment was continued and on December 13, 1940, four days after treatment was instituted, the baby seemed well except for persistent photophobia. Examination of the blood revealed a sulfathiazole concentration of 1.6 mgm. per cent, hemoglobin, 95 per cent; red cells, 4,600,000; white cells, 15,000, and a normal smear showing polys, 50 per cent; small lymphs, 38 per cent; large monos, nine per cent, and myelocytes, three per cent. Urinalysis was normal.

Sulfathiazole was continued two additional days at six hourly intervals. Negative smears were obtained on the third, fifth and ninth days after the institution of treatment.

Subsequent history revealed premature rupture of the membranes 48 hours before delivery. Silver nitrate was not instilled into the eyes at the home delivery as had been surmised by the inflammatory signs on admission, because the baby was immediately started to the hospital for premature care.

No toxic signs at any time were noted and the infant recovered with perfect corneae. The subsequent course has been uneventful.

This case is reported because of the probability of antepartum infection of the eyes due to the premature rupture of the membranes, the necessity of immediate use of silver nitrate as a prophylactic following delivery, and also to show the prompt recovery with no disability under sulfathiazole therapy.

THE AUTHOR

Dr. Blanton, graduated Medical College of Virginia, 1924; Postgraduate Harvard Medical School, 1929-1930, Pediatrics; State Chairman of American Academy of Pediatrics; F. A. C. P.; Licentiate American Board of Pediatrics.

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

Methods for finding cases of tuberculosis have not yet been reduced to a standardized pattern. Experience has prompted certain changes and practical considerations make it necessary to eliminate wasteful methods. Pressed by the need for economy some workers now place almost sole reliance on the x-ray and seem ready to discard the tuberculin test as a selective screen. Among those who feel that the tuberculin test is still of great importance is J. Arthur Myers. In his paper "Tuberculosis in Students" he delineates a conception of tuberculosis which some may not accept in practice but which furnishes food for thought. Space permits here only an abstract of the discussion on the tuberculin test.

Importance of the Tuberculin Test

Ten years ago to say a student had tuberculosis really meant that he had consumption. It was the tuberculosis diagnosed by the ancient Chinese, Babylonians, Greeks and all since their time. A more recent and more logical conception of tuberculosis is that it begins when the first neutrophile phagocytoses a tubercle bacillus and the outcome depends upon subsequent physiologic events. From three to seven weeks after tubercle formation begins, the tissues are sensitized to the protein fraction of the tubercle bacillus and apparently remain so as long as tubercle bacilli are alive in the body. This sensitivity is determined by the tuberculin test. The tubercles may be microscopic in size and there is no way of determining in a given individual whether clinical tuberculosis will ever make its appearance. Since the body is seeded with tubercle bacillus, clinical lesions may appear at any time and in almost any place. Therefore, all who react to tuberculin have tuberculosis.

The acceptance of this conception is imperative, says the author, because it is the only conception that will lead us to the control of the disease. Normal appearance and normal x-ray shadows in a positive reactor, do not justify us in looking lightly upon the condition. Inspection of the chest does not include all of the lung and some lesions may be too small to cast shadows. Moreover, clinical tuberculous lesions may develop in many parts of the body other than the lung.

"Even if we could be certain that in the tuberculin reactors there are at the moment no lesions except those of the primary complexes, we have no way of determining what minute acute or chronic clinical lesions will develop or where they will be located. The reactor whose complete examination is negative today may have tuberculosis meningitis, miliary disease, tuberculous pneumonia, peritonitis, pleurisy with effusion or synovitis, tomorrow."

Chronic clinical tuberculosis is essentially a disease of adults—it only begins to get into its stride in the college and university age period. Therefore, we find only a small percentage of tuberculin reactors with chronic, clinical tuberculous lesions during their few student years, yet it is of great importance that their disease be detected before it becomes contagious.

"Occasionally one asks why it would not be better to omit the tuberculin test and proceed directly to the x-ray film inspection of the chest, since the occasional person has spoken of this inspection as the best case-finding method. No student of tuberculosis could be satisfied with such a procedure because the x-ray film examination is totally inadequate in determining the true tuberculosis situation in any student body. Such examination is limited to a small part of the body; indeed, it does not include more than 75 per cent of the lungs themselves. Moreover, it reveals evidence only of gross lesions and does not differentiate these with reference to etiology, tuberculous or non-tuberculous. We divide pathology into gross and microscopical for teaching and practical purposes. The x-ray reveals only the gross. For example, among those who have primary tuberculosis complexes in the body, the x-ray film of the chest reveals evidence of their presence in only approximately 10 to 15 per cent. The student of tuberculosis demands something far more delicate than the x-ray film and he finds it in the tuberculin test.

"It would be as futile to try to control tuberculosis without the tuberculin test as to try to control syphilis without the Wassermann or an equally good test. At the University of Minnesota we have in the neighborhood of 4,500 entering students each year and the tuberculin test indicates that approximately 1,000 of them have the first-infection type of tuberculosis somewhere in their bodies; that is, primary tuberculosis complexes have been established, and to us the tuberculin reaction means that living tubercle bacilli are present. Among our

(Continued on page xxix)

President's Page

During the past month officials and official committees of the Association have conferred with business and labor leaders with reference to the feasibility of setting up a statewide plan of voluntary medical and surgical insurance. Great interest has been manifested on all sides in this movement. Many labor and industrial leaders are coming around to the belief that the organized medical profession should set up its own plan to meet the existing conditions in West Virginia.

To date no plan has been drafted, although much preliminary work has already been accomplished. We have encountered much enthusiasm and also many differences of opinion within the profession. Doctors differ on whether subscribers to an insurance plan should be limited to payroll deduction groups, or open to all comers. They differ on methods of payment for services rendered. They differ on the type of coverage, some believing that service should be limited to hospital cases and others feeling that home and office calls should be included. If a plan is started in West Virginia, sacrifices will have to be made by many groups in order to present a practical system that will suit the greatest number. For the time being, however, the decision that faces us is not what kind of a plan we want, but do we want a plan at all.

Well in advance of the Charleston meeting in May, the Medical Service Committee expects to submit to the delegates and membership a number of proposed statewide plans of voluntary prepayment insurance for study. Before any plan is brought up for action, however, the Association will first be given an opportunity to vote yes or no on the simple question, "Do you favor voluntary prepayment sickness insurance under Association sponsorship and control." If the answer to that question is "no", then the Medical Service Committee will proceed no further. If the answer is "yes", we can then start to consider what type of plan we want.

I have discussed this question of voluntary insurance in each of my two previous pages in the JOURNAL, not with the idea of attempting to influence opinion either for or against the proposition, but to keep this subject before you for your careful study and consideration. In my humble judgment, it is the most important thing that will come before the Association during my term as president. I personally do not care what decision is reached, but I care tremenduously to see that decision reflect the thorough and careful consideration of our membership.

This subject of insurance will again be the chief theme of this page next month. Therefore, I would appreciate letters and communications from interested members bringing out controversial principles they would like to have discussed.

Before signing off let me call your attention to two other matters in which we all share a major interest. First, the seventy-fourth annual meeting of the Association to be held in Charleston on May 12-14. Make your reservations early and plan to attend this great occasion. Second, our legislative committee is rendering yeoman service. Read the report on pending legislation in this issue of the JOURNAL and give the committee your prompt and active support.

Robt. C. Bufford

President.

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THE LEGISLATURE TO DATE

At press time the Association was displaying a keen interest in four pending bills before the West Virginia legislature. Efforts were being made to secure the enactment of two of these proposed measures, the amendment of the third and the defeat of the fourth.

The Association is one of the co-sponsors of House Bill 246 (same as Senate Bill 94) introduced by Dr. George Evans of McDowell county to provide for the licensing and regulation of hospitals, convalescent and maternity homes. Shortly after this bill was introduced on February 15, the osteopaths made a determined effort to get their group exempt from its provisions. Exemption was finally denied by the House Committee on Medicine and Sanitation after extended hearings but the committee amended the bill to include an osteopath on the "State Committee on Hospitals" set up under the provisions of the act.

Briefly the amended bill now provides for a State Committee on Hospitals to make and enforce proper rules and regulations for the licensing of hospitals in West Virginia. This committee is to be composed of the state health commissioner and four members, two of whom must be active members of the staff of a hospital approved by the American College of Surgeons, one must be an officer, director or owner of a hospital and one shall be a licensed osteopath. One full-time inspector shall be employed at a salary fixed by the committee to inspect all West Virginia hospitals annually. Licensing fees range from $10 to $100 annually, according to the size of the hospital. This bill, with amendments, was favorably reported on the floor of the House of Delegates on February 20 with a good chance of passage. Other sponsors of this bill include the Hospital Association of West Virginia and the West Virginia Public Health Council.

The next measure in which the Association was displaying a lively interest was Senate Bill 100 introduced by Dr. (Senator) Ward Wylie on February 13. This bill, if passed, will make it unlawful for any employer of labor to enter into any contract with any hospital to render service for compensable injuries except through the Workmen's Compensation Department. This measure will eliminate private contracts between hospitals and employers wherein an employer will pay a hospital a fixed amount per month per man for industrial accident cases, in return for which the hospital will agree not to file bills for treating such accident cases through the compensation fund. Although this practice is not widespread, it has developed in Logan county to such an extent that the Association is reliably informed that some of the monthly payments range as low as 10 cents per month per employee. It goes without saying that adequate medical, surgical and hospital service can not be rendered for such a pittance and there will be inevitable marked deterioration in the quality of service if this practice is not curbed.

This bill was favorably reported out of the Senate Committee on Medicine and Sanitation on February 13 and was passed by the Senate with only three dissenting votes on February 19. At press time this bill (Senate Bill 100) was pending before the House Judiciary Committee.

Senate Bill 38 (same as House Bill 107) is the proposed administration-sponsored state labor relations measure, generally known as the little Wagner act. Doctors are not direct-

ly affected by this act, as they are placed in the "executive" class. Hospitals, however, are greatly concerned over that section of the bill which would give hospital employees the right to strike. While the hospitals are not opposing the act itself, they are seeking exemption. Their position was placed before the Senate Judiciary Committee in an open hearing on the Senate floor on the evening of February 14 by Mr. H. L. Snyder, Charleston attorney. At press time it appeared that the chances were good for hospital exemption.

On February 16 Senator Earl Smith of Marion county introduced an old favorite (Senate Bill 108) in the West Virginia Senate to exempt spiritual healers from the provisions of the medical practice act. This measure is sponsored by the Christian Science church and its purpose is to permit Christian Science faith healers to open offices in regular downtown office buildings, advertise their service to the public, and charge fees for their spiritual invocations. On one or two previous occasions the Association has volunteered to withdraw its opposition to the "Christian Science Bill" if its sponsors would accept an amendment to prohibit advertising and limit "healing by prayer" to the churches and homes of Christian Science members. Their constant refusal to accept such an amendment is the best proof of what they are trying to accomplish. Health officials and doctors in general recognize the tremendous health hazard that would be involved in advertised, uncontrolled practice by persons who refuse to recognize there are such communicable diseases as diphtheria, scarlet fever, typhoid fever and smallpox. The Woman's Auxiliary is leading the campaign against the faith healing measure.

Doctors who are interested in any of the above measures, either for or against, may make their influence felt by writing their respective senators and delegates at the statehouse in Charleston. The Association's Legislative Committee, headed by Dr. Wylie, will appreciate tangible support of House Bill 246 and Senate Bill 100, and will be grateful for active opposition to Senate Bill 108. If members will send copies of legislative letters to the Association headquarters, the committee can effectively follow up such communications.

PREPAYMENT INSURANCE

Although there has been no recent announcement on the subject, work is going forward toward submitting some plan of state-wide voluntary prepayment sickness insurance for the consideration of the Association's House of Delegates at the May meeting in Charleston. A subcommittee of the Association's Medical Service Committee still has the assignment and several recent meetings have been held. Whatever is presented will be submitted to the delegates and to the Association membership for consideration and study.

Discussing programs for providing medical care which are being tried out by various state medical societies, *The Journal of the American Medical Association* for February 1 says that: "One difficulty seems to be common to all these plans. The public is not particularly enthusiastic about prepayment for medical service. There is no evidence that the citizens of this country are yearning for any universal compulsory system.

"Physicians were cognizant of the problem of providing good medical service to the indigent and low income classes long before social reformers began to take the problem into politics. And the medical profession did something about it! Fred DeArmond, 'Cutting the Doctor's Bill to Fit,' in *Nation's Business* for November, is impressed by two different types of approach:

"Doctors try a new procedure on a guinea pig first. If it works, they use it on a patient.

"* * * Social reformers * * * experiment on the whole nation and, if there isn't too much revolt, they then test the procedure on a guinea pig.

"Between 1932 and 1938 more than 200 county medical societies entered into agreements with relief authorities to provide medical care for the indigent. In twenty-six states, county medical societies cooperated with the Farm Security Administration in trying out plans to provide medical service to the low income classes. Not all of these plans were a success and physicians did not expect them to be. They were frankly experiments. Organized medicine also experimented with medical service bureaus through which the indigent were 'filtered' to the proper source of medical service and which made arrangements for convenient postpayment plans. Some of these experiments failed, but something was learned from each of them. And the whole nation was not used as a guinea pig. In a number of states, prepayment plans are now being introduced on a statewide basis. Sometimes an enabling act of the state legislature has been required. The state plans are not all alike. Michigan, California and New York, where the plans have actually gone into operation, differ in a number of minor details. In Wisconsin several plans were tested. The state medical society in every case is watching not only its own plan but those of all other states engaged in such an experiment. Unlike many social reformers and critics, the medical profession will abandon any of the features of a plan that prove unsatisfactory or may adopt any more successful features from other states."

CART BEFORE THE HORSE

In late January there was a rumor around the statehouse that a bill was about to be introduced in the legislature which would impose a drastic penalty on any physician who turned down a case because of the patient's inability to pay for medical services. The proposed bill did not materialize, although one northern West Virginia newspaper did carry a "special" news story from Charleston in which such a proposed measure was mentioned. *The Fairmont West Virginian* on February 4 took up the cause of the medical profession and discussed the question at some length. *The West Virginian* editorial titled "Cart Before the Horse" follows:

Somewhat ridiculous, to our mind, is the information, contained in a "special" news story from Charleston, that the senate soon will receive a bill which would impose a "drastic" penalty on any physician who turns down a case because of the patient's inability to pay for medical services.

In the first place, such a bill would open wide the door for wholesale frauds to be practiced by those who could, but would rather not, pay their honest debts.

All a person need do, to get instant medical attention would be to ask for it and declare he could not pay. * * *

Further, how much medical attention must be given? Must the doctor, himself, supply necessary medicine? Or foot the bill for necessary hospital expenses? And would the law apply to every physician, whether a general practitioner or a specialist? And must a doctor, in one end of the county, answer such a call to the other end of the county under pain of this "drastic" penalty?

When the lawmakers start legislating away part of the livelihood of a class of indispensable professional people as a means of correcting a social evil, they would seem to have surpassed the bounds of reason.

It is a case of getting the cart before the horse.

It would be well to insure that every man, woman, and child who needs medical care gets it. * * *

But we say it is against all reason to impose the entire loss, and in this case, the entire problem, upon * * * the physician.

It is a social problem, not the problem of one person or a group. The loss ought to be shared by the whole people, for they are receiving the benefit. * * *

It is well enough to require a man to serve, for the social good, if the whole burden is not placed upon him; if he does not have to suffer the entire loss.

TWENTY-FIVE YEARS AGO

From the March, 1916, Journal

Original articles were written by Drs. C. P. Showalter, W. W. Morton, Prof. J. E. Norman, B. Sc., and Dr. Irvin Hardy.

* * * *

Editorial: "We should not forget the social side of our medical societies. Often we form opinions of men in the profession whom we have never met and for whom we have feelings of antagonism. To meet them at our society meetings; to have lunch after the meeting with them; to smoke with them, makes us realize that our previous conception is a wrong one, and that they are not such 'bad fellows' as they have been painted by disgruntled colleagues, dissatisfied patients and professional gossips. Really, we find that the majority of our associates are a particularly decent lot of men and the better we know them the better we like them. * * *

"It is realized that there may be local conditions, influencing to a very great extent the affairs of other societies, of which we have no knowledge. We would ask that the secretaries write us their troubles, and let us take them up with their district councillors. It is possible that consultation in these cases may be of as much benefit, as in the illness of our patients."

* * * *

"Cabell county—Three new members were elected to membership, Drs. R. J. Wilkinson, W. E. Vest and C. B. Young, Jr., all of Huntington.

"Braxton county—Our December meeting was not well attended, because of the fact that most of the doctors were busy at home and could not find time to come. The following officers were elected: President, Ernest P. Ropp, Servia; vice president, C. C. Rusmisell, Gassaway; secretary-treasurer, J. W. Kidd, Burnsville.

"Harrison county—Officers for 1916: President, Dr. C. A. Willis, Clarksburg; vice president, Dr. B. F. Matheny; secretary, Dr. S. L. Cherry; treasurer, Dr. C. O. Post.

"Kanawha county—Dr. J. W. Murphy of Cincinnati addressed the Kanawha County Medical Society, February 2, 1916, giving a most instructive lecture on 'Esophagoscopy and Tracheobronchoscopy.' His demonstrations on the phantom of the various instruments used in the removal of foreign bodies was very complete. Those chiefly met with were bones of meat or fish, beans, pins, coins, buttons, tags and coat weights.

"Mingo county—The officers of the Mingo County Society for the year are: President, Dr. W. H. Triplett, Matewan; first vice president, Dr. James Turner, Borderland; second vice president, Dr. B. J. Read, Red Jacket; secretary-treasurer, Dr. G. B. Irvine, Williamson."

* * * *

The engagement of Dr. B. H. Swint of Charleston to Miss Marceline Smith, also of Charleston, has been announced.

Dr. A. A. Smith of Spencer has recently moved to Big Creek, where he will continue to practice.

Dr. F. L. Round has changed his location to Wilcoe, W. Va.

Dr. J. E. Coleman of Beckley is attending the Tulane clinics and reports an excellent course. The doctor expects to build an extra wing to his hospital in the early spring.

Dr. H. H. Haynes of Clarksburg is spending two weeks in the east.

* * * *

"To get a run for your money—chase a street car."

Adequate Riboflavin

An adequate supply of riboflavin, also called vitamin B^2 in later life will not compensate for a deficiency in childhood, *Hygeia, The Health Magazine* for February warns.

Milk is the richest source of riboflavin. It is also abundantly present in those plant and animal tissues in which the most active chemical changes take place, such as the leafy and germ portions of plants and the liver, kidney and heart organs. The name riboflavin indicates that the vitamin contains a sugar called ribose and flavin, a yellow pigment containing nitrogen.

"Symptoms of riboflavin deficiency," *Hygeia* says, "are collectively designated 'ariboflavinosis' and are characterized by a 'cheilosis' or inflammation and scaling around the corners of the mouth, a condition called 'poor man's mouth' in some sections of the country, lesions around the nose and eyes and functional disturbances of the eye.

"Riboflavin is destroyed by strong sunlight. A practical application of this fact for city dwellers is to make sure that the milk, delivered early in the morning, is not left standing for a long period of time in the bright rays of the sun."

General News

The State Meeting

Plans are rapidly nearing completion for the seventy-fourth annual meeting of the Association to be held in Charleston on Monday, Tuesday and Wednesday, May 12-14, 1941, with headquarters in the Daniel Boone Hotel. Doctors desiring to stay at the Daniel Boone should apply for reservations right away. Exhibits and general meetings will be at the Shrine Mosque, directly across the street from the hotel.

Among the outstanding guest speakers who have already accepted invitations to appear on the state program are Dr. Stanley Gibson, associate professor of pediatrics at Northwestern University; Dr. Morris Fishbein, editor of the *Journal of the American Medical Association*; Dr. Henry H. Kessler, Newark; Dr. I. U. Ravdin, professor of surgery, University of Pennsylvania; Dr. T. J. Williams, obstetrician with the University of Virginia Hospital, and Dr. George J. Thomas, Pittsburgh anesthetist.

The oration on medicine will be delivered on May 13 by Dr. Joseph A. Bargen of the Mayo Clinic, Rochester, Minnesota, and the oration on surgery will be presented on May 14 by Dr. Hugh A. Bailey of Charleston.

One of the features of the Charleston meeting will be a full day session on May 13 of the industrial physicians and surgeons of the state. During the forenoon Dr. Kessler will address the general meeting at the Shrine Mosque. Immediately after this, transportation will be furnished for the industrial group to the DuPont plant at Belle where they will be lunch guests at the DuPont clubhouse and where the afternoon program will be presented. Scheduled for the afternoon meeting, besides Dr. Kessler, will be Dr. R. R. Sayre, director of the U. S. Bureau of Mines, and Dr. Paul A. Neal, chief of the Research Section of the Division of Industrial Hygiene of the United States Public Health Service.

Plans for golf and other entertainment are being worked out by special committees of the host society. Some type of entertainment is planned for each evening of the convention, with the annual banquet and ball scheduled for the final night.

War Medicine

War Medicine, a new bimonthly periodical being published by the American Medical Association, Chicago, in cooperation with the National Research Council, Washington, D. C., is being offered as a means of making an adequate record of the contribution of the medical profession to the nation's defense, an editorial in the first issue of the publication states. The editorial says:

"The problems involved in medical care of troops in training and in the field, of men on battleships and submarines and of pilots, observers and gunners in the air are specialistic aspects of medical practice with which few civilian physicians are familiar. The peculiar nature of wounds resulting from gunshot and explosions, the physiologic changes associated with life aboard a submarine and the extraordinary hazard of infections when hundreds of thousands of men are closely crowded in barracks create hygienic and sanitary conditions to which few physicians in civilian life have given serious consideration. Yet all of these factors may become at any moment the intimate and immediate concern of any and every physician in the United States.

"In previous military emergencies American physicians have not been found lacking. Whenever called on, they have given of their utmost for defense or for attack. Well nigh one-third of the physicians in the United States were engaged in some activity related to the preparedness of the nation in World War I. Even a greater number might be required in contingencies now in prospect should the country be drawn into the present conflagration.

American College of Surgeons

March 17, 18 and 19 have been set as the dates for a sectional meeting of the American College of Surgeons in which the states of Pennsylvania, Ohio, Virginia, West Virginia, Delaware, Maryland, New Jersey, New York and District of Columbia will participate. Headquarters will be at the William Penn Hotel, in Pittsburgh.

The twenty-one approved hospitals of Pittsburgh will provide an excellent clinical background for the college meeting. Many of them will hold operative and non-operative clinics each morning during the meeting, and will also hold demonstrations of hospital procedures for the hospital executives who will attend the hospital conference which will

also be sponsored by the college during the same three days.

Distinguished surgeons from all parts of the country will address the scientific sessions and lead the conferences and panel discussions. Among them will be the president of the college, Dr. Evarts A. Graham, professor of surgery at Washington University Medical School, St. Louis. At the headquarters hotel there will be educational and scientific exhibits and showing of motion pictures portraying surgical and hospital procedures. Daily bulletins will be issued listing the various clinics, sessions, conferences, and other events of each day. A large public meeting on the subject of "Conservation of Health" on the evening of the third day will be the final feature.

The medical profession at large, as well as hospital trustees, superintendents, pathologists, dietitians, and other hospital executive personnel, are invited to attend the sessions of the sectional meeting and the hospital conference, a sufficiently varied program having been arranged to interest members of the several professions which are concerned with service to the sick and injured.

John Phillips Memorial Award

On the recommendation of the Committee on Fellowships and Awards, the Board of Regents of the American College of Physicians, by unanimous resolution, has voted that the John Phillips Memorial Medal for 1941 be awarded to Dr. William Christopher Stadie, associate professor of research medicine at the University of Pennsylvania, Philadelphia, for his significant contributions to the knowledge of anoxia, cyanosis and the physical chemistry of hemoglobin, and more especially for his recent studies on the subject of fat metabolism in diabetes mellitus.

This award was established by the college October 27, 1929, to be given periodically for some outstanding piece of work in internal medicine. Internal medicine in this instance is interpreted to include not only clinical science, but all of those subjects which have a direct bearing upon the advancement of clinical science. The work must have been done in whole or in part in the United States or in Canada.

Nominations for the award are made to the Committee on Fellowships and Awards of the American College of Physicians. The recipient must file with the college a written account of his work, and to present his results as a paper before the next annual session, at which time the award of a bronze medal is made by the president of the college.

Registered Nurse Power

More than 1,500 of the approximately 4,500 questionnaires sent out by the West Virginia State Nurses' Association in the February survey to determine the registered nurse power in this state already have been received and tabulated at the Association's headquarters in Charleston. A large proportion of the registered nurses who already have responded stated on their questionnaires that their services are available in some measure for local or national emergencies.

Long inactive in the nursing profession, many wives and mothers in various communities throughout West Virginia have volunteered their services for any local emergency and have expressed an interest in refresher courses. Some hospitals already have organized such classes which will enable the inactive nurse to perfect her nursing techniques in modern nursing methods, drugs and appliances.

Southeastern Surgical Congress

The Southeastern Surgical Congress is holding its annual session at Richmond, Virginia, on March 10, 11, 12, 1941, with headquarters at the John Marshall Hotel. All members of the medical profession are invited to attend.

Scheduled speakers include Dr. Irvin Abell, Louisville; Dr. Fred W. Rankin, Lexington, Kentucky; Dr. Willis C. Campbell, Memphis; Dr. Temple Fay, Philadelphia; Dr. Gabriel Tucker, Philadelphia, and Dr. Walter G. Stuck of San Antonio, Texas.

West Virginia will be represented on the program by Dr. Hu C. Myers of Philippi with a paper on "Duodenal Drainage in the Diagnosis of Gallbladder Disease", and by Dr. Justus C. Pickett, Morgantown, with a paper on "The Role of the Fascia in Low Back Pain."

Registry of Medical Technologists

It has recently been announced that the Registry of Medical Technologists of the American Society of Clinical Pathologists has been moved from Denver, Colorado, to Muncie, Indiana. Since its organization in 1928 the registry has been located in Denver, where its work has been carried on under the administration of its distinguished chair-

man, Doctor Philip Hillkowitz, and Mrs. Anna R. Scott, the registrar. The increasing burden of the office, together with a recent serious illness, prompted the resignation of Doctor Hillkowitz. His successor is Doctor Lall G. Montgomery, the pathologist of the Ball Memorial Hospital, of Muncie, Indiana. The registry will be situated at the hospital.

Southern Pediatricians to Meet

Region II of the American Academy of Pediatrics, representing the southern states, will hold its annual meeting in Richmond, Virginia, on April 24 and 25. An excellent program is planned and will be announced next month. All physicians interested in pediatrics are invited to attend this two day session.

Reserve Officers Called

The following Association members have been called to active military duty since the last issue of the JOURNAL:

Major Wm. B. Hunter, Huntington; Major Gilbert O. Crank, Lawton, to Wilmington, N. C.; Major E. H. Starcher, Earling, to Charleston, W. Va.; Captain Garvey V. Bowers, Kimball, to Porto Rico; First Lieutenant Edw. B. Holmes, Parkersburg, to Fort Knox, Ky.; First Lieutenant Wm. B. Siegel, Charleston, to Fort Knox, Ky.; First Lieutenant L. A. Dickerson, Fayetteville, to Denver, Colorado; First Lieutenant William Perilman, Wheeling, to Wilmington, N. C.; First Lieutenant Lester Dunman, Gary, to Wilmington, N. C.; First Lieutenant John A. Bowers, formerly of Caretta, to Porto Rico; First Lieutenant George R. Cunningham, Killarney, to Porto Rico; First Lieutenant J. C. Laslie, Charleston, to Ft. McClellan, Alabama.

The following U. S. Naval Reserve Officers have been ordered to active duty:

Dr. A. L. Shinn, formerly of Wheeling, is now on duty at the Marine base at San Diego, California; Lieutenant Wm. R. Counts, Welch, to Naval Reserve Flight Selection Board, Washington, D. C.; Lieutenant James D. Bird, Jr., Wheeling, to Naval Hospital, San Diego, Calif.; Lieutenant Willard F. Daniels, Huntington, to Guantanamo Bay, Cuba; Lieutenant C. S. Duncan, Huntington, to Guantanamo Bay, Cuba; Lieutenant Duke A. Dent, Charleston, to Naval Training Station, Norfolk, Virginia; Lieutenant Lee F. Dobbs, Jr., Wheeling, to Naval Air Station, Pensacola, Florida; Lieutenant Commander Merrill R. Fox, Charles Town, to Norfolk Naval Hospital, Portsmouth, Virginia; Lieutenant Newman H. Newhouse, Charleston, to Naval Air Station, Jacksonville, Florida; Lieutenant Commander Berlin B. Nicholson, Parkersburg, to Norfolk Naval Hospital, Portsmouth, Virginia; Lieutenant Wm. A. Thornhill, Jr., Charleston, to Naval Reserve Recruiting Station, Charleston, W. Va.; Lieutenant Commander Wesley C. Thomas, Charleston, to Naval Hospital, Parris Island, S. C.; Lieutenant Bruce H. Pollock, Charleston, to Norfolk Navy Yard, Portsmouth, Virginia.

Headquarters Offices Moved

On February 24 the Association headquarters office in Charleston was moved from the Public Library Building on Hale Street to the new Atlas Building, 1031 Quarrier Street, next to the Medical Arts Building. The new headquarters suite is on the third floor front (Room 302) and consists of an average size reception office room, one small private office room and a large library and conference room 16 by 25 feet. The suite is well lighted and ventilated, with complete air conditioning for the summer months.

The Association moved from two small rooms in the Professional Building, Charleston, to the large suite on the ground floor of the Public Library building in 1929.

Scientific Exhibit Space Available

At the White Sulphur Springs joint meeting with Virginia last year, the Association for the first time went in for a large display of scientific exhibits. The scientific exhibits were so successful and attracted such favorable comment that plans have been made to have from 12 to 15 scientific exhibits at the Charleston meeting next May 12-14. Dr. Paul Revercomb of Charleston has been placed in charge of the scientific exhibit committee and has already made arrangements for suitable display booths at the Daniel Boone Hotel.

Doctors, hospitals, clinics and other allied groups interested in having scientific exhibits at the Charleston meeting should get in touch with Dr. Revercomb at once. His address is Medical Arts Building, Charleston. Dr. Revercomb recently announced that several exhibit spaces were still available.

County Society News

Cabell County

The Cabell County Medical Society held its regular monthly meeting at the Hotel Prichard on Thursday evening, February 13. The program was devoted to two problems, (1) "The Selective Service and the Physician", and (2) "Industrial Hygiene and the Physician." Major L. R. Lambert, M. D., chief of Medical Bureau for the Selective Service Act in West Virginia, spoke on the first subject and Dr. J. W. Crosson, director of the Bureau of Industrial Hygiene of the State Health Department, spoke on the latter. Approximately one-half hour of discussion was devoted to each field.

A new committee on industrial hygiene was appointed, consisting of Dr. J. J. Brandabur, chairman; Dr. M. B. Moore, Dr. J. L. Hutchison, Dr. A. D. Kessler and Dr. R. M. Wylie. A committee on national defense was also appointed consisting of Dr. I. I. Hirschman, Dr. F. Brown, Dr. C. P. S. Ford, Dr. C. H. Wright, and Dr. C. G. Willis.

Dr. George M. Lyon, president of the society, has just been advised by the Surgeon General of the U. S. Navy of his selection by the Naval Reserve Selection Board for promotion to the grade of Commander, MC - V (S) USNR.

COLE D. GENGE, *Secretary.*

Fayette County

The Fayette County Medical Society held its regular monthly meeting at Conley Hall, Montgomery on January 28. The guest speaker was Dr. Oscar B. Biern of Huntington, presenting the subject of "Management of Hemorrhage of the Upper Gastrointestinal Tract."

Dr. John A. McCraw of Cunard and Dr. R. M. Lamb, Winona, were accepted as new members of the society. Dr. C. F. Jackson of Milburn, was transferred to membership from McDowell county.

It was reported that Dr. Wray Tomlinson of Montgomery had moved out of the state, and Dr. Guy Daugherty of Fayetteville had gone to Rochester, Minnesota.

G. A. DANIEL, *Secretary.*

Kanawha County

The Kanawha County Medical Society held its regular monthly meeting in the ballroom of the Daniel Boone Hotel on Tuesday evening, February 11. The essayist of the evening was Dr. Porter Vinson of the Medical College of Virginia at Richmond. Committees for the year were announced and plans were started to get ready for the annual meeting in Charleston, on May 12-14, 1941.

W. A. THORNHILL, JR., *Secretary.*

Logan County

The regular monthly meeting of the Logan County Medical Society was held at the Aracoma Hotel in Logan on Wednesday evening, February 12. In the absence of Dr. C. A. Davis, president, Dr. J. W. Carney presided. Dr. J. L. Patterson acted as secretary in the absence of Dr. W. P. Hamilton, who recently underwent an emergency appendicitis operation.

Dr. Thomas Folsom of Huntington was the guest speaker and his subject was "Chemotherapy in Pediatrics."

Dr. Dana T. Moore of Stirrat was appointed to serve on the Board of Censors during the absence of Dr. W. S. Gilmer. The application of Dr. R. S. Fitzgerald of Logan, was read and referred to the Board of Censors.

W. P. HAMILTON, *Secretary.*

McDowell County

The regular meeting of the McDowell County Medical Society was held at the Appalachian Community Room in Welch on February 12, 1941. A film "Scarlet Fever" was presented, loaned through Lederle & Co. Dr. Dyer, president, reported on the Conference for County Medical Society Presidents and Secretaries. The president appointed the following committees:

Legislative committee: Dr. F. E. LaPrade, chairman; Dr. G. P. Evans, Dr. V. L. Wetherby.

Public affairs committee: Dr. J. H. Anderson, chairman; Dr. J. S. Vermillion, Dr. A. J. Villani.

Medical preparedness committee: Dr. J. A Bennett, chairman; Dr. C. W. Vick, Dr. E. Vermillion.

The meeting was followed by refreshments being served.

A. J. VILLANI, *Secretary.*

Mercer County

The Mercer County Medical Society held its regular monthly meeting at the Municipal Building in Bluefield, Thursday, January 23, 1941. Dr. Frank Holroyd, councillor for the fifth district, reported on the meeting of the Association Council held at Charleston on January 17 and the actions of the Council were discussed by the members.

The speaker of the evening was Dr. C. J. Reynolds who gave a most interesting paper on "Results in Treatment of Gonorrhea", in which he contrasted the results in the new chemotherapy with the treatment used before. His paper was discussed by Doctors Hewitt, Horton and Steele. Dr. E. L. Gage of Princeton read a very good paper on the "Diagnosis of Brain Tumors", which was discussed by Doctors Rogers, Wade, St. Clair, and Steele.

FRANK J. HOLROYD, *Secretary*.

Monongalia County

The Monongalia County Medical Society held its regular monthly meeting on Tuesday evening, February 4, 1941, in the Hotel Morgan. Dinner was served at six o'clock p. m., after which Dr. C. H. Marcy of Pittsburgh gave a most interesting presentation on "Chronic Chest Conditions."

CARL E. JOHNSON, *Secretary*.

Parkersburg

The Academy of Medicine of Parkersburg held their monthly meeting at an afternoon and evening session on February 5, 1941. At luncheon at the Camden-Clark Hospital, Dr. Benjamin M. Baker, Jr., F.A.C.P., Associate in Medicine at Johns Hopkins Hospital gave a short discussion on "Histamine Therapy."

For the evening session, the Academy convened at St. Joseph's Hospital at eight o'clock p. m. Dr. Benjamin M. Baker gave another very interesting talk on "Newer Concepts of the Pathogenesis and Treatment of Hypertension."

There was no business taken up at this meeting of the academy.

A. C. WOOFTER, *Secretary*.

An infant or young child who sleeps with his eyes partially open may suffer no harmful effects, *Hygeia, The Health Magazine* declares in answer to an inquiry.

Obituaries

Doctor F. T. Dare

Dr. Frank Theodore Dare, prominent Wellsburg physician and surgeon and highly esteemed by all who knew him, died of carcinoma at his residence on the morning of January 21, 1941, at the age of 64 years.

Dr. Dare was born in East Liverpool, Ohio. When he was a child the family moved to Wellsburg, West Virginia, where he received his early education. He graduated from the Scio College of Pharmacy, Scio, Ohio, in 1896, and from the Baltimore Medical College in 1900.

He spent several years in New York hospitals, where he took postgraduate work, and later served as interne in the New York Lying-In Hospital and as ambulance surgeon. He also took postgraduate work in the New York Polyclinic Hospital and New York Postgraduate Medical School. Since 1908 Dr. Dare has engaged in private practice at Wellsburg.

Dr. Dare was an active member of the Methodist church and an ardent temperance advocate.

He was a member of the Brooke County Medical Society, the West Virginia State Medical Association, the Southern Medical Association, and the American Medical Association, and often attended medical conventions in different parts of the United States.

Dr. Dare is survived by his widow and one daughter, Mrs. Franklin S. Miller.

Doctor M. D. Cure

Dr. Mortimer Daniel Cure, well known Lewis county physician, died at his home in Weston on January 1, following a long illness. He was 73 years of age. He was graduated from Baltimore Medical College in 1901 and located in West Virginia the following year.

Making Children Different

"There probably is no unhappier child than the one whose parents insist that he be different, wear different clothes, have a different kind of haircut, or in some other way be made conspicuous," Douglas E. Lawson, Ph.D., Carbondale, Ill., declares in *Hygeia, The Health Magazine*.

BOOK REVIEWS

Treatise on Medico-Legal Ophthalmology

"Treatise on Medico-Legal Ophthalmology." Albert C. Snell, M. D., St. Louis, The C. V. Mosby Company, 1940.

This book deals essentially with the fundamental principles of medico-legal ophthalmology. Doctor Snell's long established reputation as a writer and teacher of ophthalmology is adequate proof of his competence to put forth such a work.

The book is divided into three sections and an appendix. The first section deals largely with the principles of law, analysis of compensation laws and the bearing of these on visual disabilities. The second section deals with the examination of the eye and the methods of determining in percentage the amount of damage sustained. The ophthalmologist will find in this section the methods used by Doctor Snell after long years of practice. Section three is entitled, "The Practical Application of Visual Efficiency Computation to Medico-Legal Practice." The appendix deals with court decisions and the Longshoreman's and Harbor Workers Compensation Act to Provide Compensation for Disability in the District of Columbia. All doctors might read with interest that part of this section dealing with the use of textbooks in court.

To arrive at a fair determination of disability in accident and compensation cases is always difficult. Particularly is this true in cases involving the eyesight. Doctor Snell has made a contribution that can be of considerable value to those having to do with any phase of medico-legal ophthalmology.

Case of Rare Infection

Sulfapyridine treatment resulted in the recovery of a patient with a rare type of blood stream infection, due to the bacteria, Bacteroides, heretofore an almost invariably fatal condition, Alex E. Brown, M.D., Henry L. Williams, M.D., and Wallace E. Herrell, M.D., Rochester, Minn., report in *The Journal of the American Medical Association* for February 1.

The authors say that the use of sulfapyridine is of particular interest inasmuch as the sulfamido compounds have been considered not to be particularly effective against anaerobic (thriving best without air) organisms. Also, contrary to the authors' previous experience with the condition, the infection in the case they report was primary in nature.

COMMUNICATIONS

Health Education Bill

January 28, 1941.

WEST VIRGINIA MEDICAL JOURNAL.

Gentlemen:

On October 3, 1940, Mr. Schwert introduced H.R. 10606 to the 76th Congress, third session, under the title: A bill to promote national preparedness and the national welfare through appropriation of funds to assist the several states and territories in making adequate provisions for health education, physical education, and recreation in schools and school camps.

Two points of this bill are worthy of particular attention:

(1) The large sum of money required for the financing of the various parts of the bill.

(2) The administrative mechanism.

Part I—Health education, physical education, and recreation in schools.

Appropriations asked for would be $50,000,000 for the fiscal year ending in June, 1941, gradually increasing up to $100,000,000 for the fiscal year ending in June, 1946.

Part II—School Camps.

A like appropriation each year.

The funds would be given to state departments of schools for conducting their programs. The connection between this program and the program of the United States Public Health Service or the program of professional groups representing the organized medical profession is not clear. It seems quite likely that in the school health programs to be followed that the directors of health education and physical education in these programs might very conceivably be those coaches who after a season or two of losing football would be relegated from the position of coach to that of health educator or physical educator regardless of training or preliminary qualifications.

The potentialities of such a bill are such that we should be as familiar with the bill as possible.

A similar bill is to be introduced into the present session of congress, again under the guise of promoting national preparedness and national welfare.

At least we physicians should be pretty well familiarized with the bill in order that we may be able to express ourselves in an intelligent manner.

GEORGE LYON, M. D.

Postgraduate Studies in West Virginia

Beginning in 1936 a program for West Virginia postgraduate clinical conferences was developed in the subjects of obstetrics and pediatrics. Such a proposal followed steps taken in this direction by the American Medical Association through an activity of the Council on Medical Education. Funds for the conduct of such a program were made available by the Childrens' Bureau in Washington operating through the Division of Maternal and Child Hygiene of the West Virginia State Health Department. Such funds, averaging $2,500.00 annually, are definitely earmarked for use in obstetrics and pediatrics. It has been possible to extend this to include venereal disease and some respiratory diseases.

In 1936 such a program was thought to be the answer to the ever-growing demand that all physicians be required to stand for periodic licensure. I for one feel that we have been and still are interested more in the "idea" of postgraduate clinical conferences than in the results. All of us who have observed this program from year to year cannot but be impressed with the poor attendance records. Even though the instructors for the lectures have been outstanding lecturers from our best medical schools the attendance has been far below what it should have been.

Another lamentable fact is even though such courses have been designed for the physicians in general practice in the rural areas and the smaller towns it has not been possible to get more than the smallest number of such physicians to give the necessary time for this work. Another objectionable feature has been the time of year for the presentation of this program. June and July have been used of necessity since the lecturers are not available while the medical schools are in session.

I for one feel that it is not possible to have a tired doctor, with the worry of a sick patient on his mind, drive any long or short distance and sit on a hard chair in the basement of a courthouse or school room with poor lighting and insects bouncing from head to head and expect him to absorb anything. I wish to ask again, is it not more the "idea" of clinical conferences than the scientific benefits possible under the present setup which holds our interest? Our State Association is going to be asked to contribute financially to a furtherance of this commendable (?) program. Are we going or coming? In my blissful state of ignorance I do not believe the returns have been commensurate in any small way to the amount of federal aid given thus far. Another question I wish to raise is in permitting federal grants-in-aid to become any fixed part of the distribution of medical service we are not going to remain a "free" profession.

Continuing my blissful state of ignorance I am propelling the idea that the medical schools graduating us should continue their rightful responsibility for our future conduct and fitness to the extent of making available to us at little to no cost, other than board and room, frequent postgraduate courses and to insist that we return at specified intervals for two to four weeks study. Our medical schools graduate us in the belief that we are qualified to be good physicians. Such a belief should be extended through our years of practice. Some plan must of necessity be evolved to care for the work of the busy practitioners while they are away for such courses. This should be simple.

ANDREW E. AMICK, M. D.

Civilian Endeavors

The many fields of civilian endeavors affected by the defense needs of a nation are well illustrated in a recent regulation established by the British government and commented on by *The Journal of the American Medical Association* for February 15.

The Journal says that it recently "called attention to the discussions now going on between members of the medical profession, including representatives of the Council on Physical Therapy of the American Medical Association, and government officials relative to suitable manufacture or control of high frequency apparatus which interferes with radio reception. In Great Britain it has been found desirable in the prosecution of the war to place governmental restrictions on the use of such apparatus. It is now necessary in that country for any person with such apparatus in his possession to have a permit from the postmaster general for its operation. Apparatus included under the control is diathermy (producing heat in body tissues by means of high frequency electric currents) and electromedical equipment which uses valves or spark coils. The unauthorized possession of such apparatus constitutes an offense under the defense regulations. The purpose of control is to reduce the number of electrical disturbance sources so that proper use of radio may continue."

Woman's Auxiliary

Annual Meeting

Hotel Carter will be the headquarters for the annual meeting of the Woman's Auxiliary to the American Medical Association which will be held in Cleveland, June 2-6, 1941. Requests for reservations should be sent immediately to Dr. Edward F. Kieger, chairman of the Committee on Hotels and Housing, 1604 Terminal Tower Building, Cleveland, Ohio.

Cabell County

The Woman's Auxiliary to the Cabell County Medical Society held their regular meeting at the home of Mrs. C. P. S. Ford in Huntington, on January 13. Mrs. E. H. Humphreys, presided at the meeting and there were 18 members present.

Professor Walter Dove, of Marshall College, Huntington, spoke on his travels in Peru, an educational and interesting talk. Mrs. J. L. Hutchinson of Huntington addressed the group on "Strange Bathing Customs in Different Countries." A very pleasant social hour was enjoyed after the meeting. Tea was served and Mesdames Byrd Hunter, I. W. Taylor, P. D. Hayman and Dorsey Ketchum assisted Mrs. Ford.

On February 10, the Cabell County Auxiliary held their monthly meeting in the form of a Valentine tea at the home of Mrs. Oscar Biern, with Mesdames Van Metre, James Brown, and Harwood as co-hostesses.

There were forty members and guests present at this function and the meeting was purely social, with the exception of making plans to help with a carnival to aid Britain on February 21.

The annual Doctors' Day Luncheon will be held on March 10, 1941, at 12:30 p. m. in the Crystal Room, Hotel Frederick.

MRS. A. G. RUTHERFORD, *Secretary.*

Fayette County

The Woman's Auxiliary to the Fayette County Medical Society held their regular meeting on January 27 at the Woman's Clubhouse, Montgomery. Mrs. George Fordham, president, called the meeting to order and there were 18 members and a number of guests present.

Mrs. V. E. Holcombe, Charleston, national auxiliary president, was the guest speaker and talked very interestingly on "Individual and Community Health Needs."

Dr. M. A. Moore, president of the Fayette County Medical Society was also a speaker, and welcomed the members of the Campus Club of New River State College, who were guests. A tea followed the business meeting.

MRS. R. A. UPDIKE, *Publicity Chairman.*

Kanawha County

The Woman's Auxiliary to the Kanawha Medical Society met on January 14 at the Charleston Woman's Club. Mrs. Ray Kessel, president, called the meeting to order and there were 45 members present. Mrs. V. E. Holcombe, national auxiliary president, whose own society is the Kanawha Auxiliary, addressed the group on "Community Health Interests."

The February meeting was held on the eleventh at the same place.

MRS. CLAUDE B. SMITH, *Secretary.*

Lewis County

The Woman's Auxiliary to the Lewis County Medical Society held their regular meeting on January 8 in the form of a dinner at the Weston Masonic Temple. Mrs. C. R. Davisson, president, presided and there were 27 members there. Mrs. H. V. Thomas, president of the state auxiliary, from Clarksburg, spoke on "State Auxiliary Work." Mrs. V. E. Holcombe, national auxiliary president, from Charleston, spoke on "National Auxiliary Work."

MRS. RALPH M. FISHER, *Secretary.*

Logan County

The Woman's Auxiliary to the Logan County Medical Society held their regular meeting on February 4, at the Rainbow Grill. Mrs. Deason, president, presided and there were 18 members present.

Dr. F. E. Brammer of Dehue spoke to the assembly on "Medical Legislation", a timely and interesting subject.

The auxiliary planned to help sell bridge tickets for a "Bundles for Britain" benefit.

The March meeting will be held at the Rainbow Grill, Logan.

MRS. W. P. HAMILTON, *Secretary.*

Marion County

The Woman's Auxiliary to the Marion County Medical Society held their regular meeting on January 28, at the Fairmont Hotel, Fairmont. Mrs. C. L. Parks, president, called the meeting to order and there were twenty members present.

Dr. V. W. Davis spoke on "Filling Community Needs."

MRS. J. W. DAVIS, *Secretary*.

McDowell County

The McDowell County Auxiliary met on Wednesday, January 8 at the Legion Building, Welch. Dr. N. H. Dyer, president of the McDowell County Medical Society, presided over the large meeting which included the Auxiliary members, doctors and friends.

Dr. L. A. Dickerson, State Department of Health, Charleston, spoke on "Infantile Paralysis." Slides were shown to illustrate the prevalence of the disease in each section. An open discussion followed, led by Dr. Charles B. Chapman of Welch, who also explained the treatment for victims of the disease.

MRS. E. O. GATES, *Secretary*.

Parkersburg

The Woman's Auxiliary to the Academy of Medicine of Parkersburg held their regular meeting on February 11 at the Chancellor Hotel with Mrs. H. A. Giltner conducting the meeting. There were 23 members present, and the meeting was held during luncheon.

Mr. Joe Savage, executive secretary of the West Virginia State Medical Association, came over from Charleston and gave a very interesting talk on "Current Medical Legislation." In addition, he gave many interesting points in regard to the functioning of the State Medical Association.

The next meeting will be held on March 11, 1941.

MRS. CHARLES L. GOODHAND, *Secretary*.

Raleigh County

The Woman's Auxiliary to the Raleigh County Medical Society met on January 20 at 12:30 p. m. for a luncheon in the private dining room of the Beckley Hotel. Mrs. E. Newton DuPuy presided and there were 17 members and one guest in attendance.

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MEDICINE—Two Weeks Intensive Course starting June 2nd. One Month Course in Electrocardiography and Heart Disease every month, except August and December.

FRACTURES & TRAUMATIC SURGERY—Two Weeks Intensive Course starting May 5th, and June 30th. Informal Course every week.

GYNECOLOGY—Two Weeks Intensive Course starting June 16th. Clinical Diagnostic and Didactic Course every week.

OBSTETRICS—Two Weeks Intensive Course starting April 21st. Three Weeks Personal Course starting May 26th. Informal Course every week.

OTOLARYNGOLOGY—Two Weeks Intensive Course starting April 7th. Informal and Personal Courses every week.

OPHTHALMOLOGY—Two Weeks Intensive Course starting April 21st. Informal Course every week.

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Miss Jean Porter, a local teacher, reviewed two recent novels, "You Can't Go Home Again", by Thomas Wolfe, and "For Whom the Bell Tolls", by Ernest Hemingway. Mrs. Clyde L. Brown, who was scheduled for a reading, was ill and unable to attend.

Mrs. M. M. Ralsten was appointed chairman of exhibits and Mrs. A. C. Echols was appointed legislation chairman for the ensuing year.

On February 17, the Auxiliary held another luncheon meeting at the Beckley Hotel. Mr. Joe Savage, executive secretary of the State Medical Association, attended as guest speaker. His subject dealt with national and state medical legislation.

MRS. H. A. SHAFFER, *Secretary*.

E. D. C. Institutes

The state association has secured the services of Mrs. Florence B. Breed, field adviser of the N. T. A., for early diagnosis institutes next month. Tentative dates are: Fairmont, March 28 and Charleston, April 1.

Neighbor Journals

Susceptibility to Sulfanilamide

A considerable number of toxic reactions to sulfonamides have been reported clinically, with detailed studies of many of them. Their occurrence has been unpredictable in the particular cases, and the causes are not understood. Smith and associates of the United States Public Health Service have attempted to discover factors which might influence the occurrence of injury from administration of these drugs.

They investigated the effects of various preliminary diets upon the reactions of rats to sulfanilamide to determine whether any particular ration could reduce the susceptibility to sulfonamide injury. The rats were kept on simplified diets of casein and cornstarch with brewer's yeast, a salt mixture, cod liver oil and olive oil, that is, a low protein but otherwise presumably adequate diet. Certain groups of animals received in addition to this list, to increase the protein content, an amino-acid, cystine; another group

For the Local Treatment of Acute Anterior

URETHRITIS

(DUE TO NEISSERIA GONORRHEAE)

SILVER PICRATE *

Wyeth

Silver Picrate, Wyeth, has a convincing record of effectiveness as a local treatment for acute anterior urethritis caused by Neisseria gonorrheae. (1) An aqueous solution (0.5 percent) of silver picrate or water-soluble jelly (0.5 percent) are employed in the treatment.

1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph. Gon. & Ven. Dis., 23, 201 (March) 1939.

*Silver Picrate, is a definite crystalline compound of silver and picric acid. It is available in the form of crystals and soluble trituration for the preparation of solutions, suppositories, water-soluble jelly, and powder for vaginal insufflation.

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received cystine plus a sulfur bearing amino acid, methionine; and a third group received a high protein diet in the form of 30 per cent casein. They were kept on these rations for about a month; then sulfanilamide was administered into the stomach daily over a period of about a month.

One-third to half the animals died in all groups except the last, the group which received the basal diet plus 30 per cent casein. In this group no anemia was detected. Many very anemic animals were noted in the other groups. The animals which received the amino-acid supplements made good weight gains throughout the period of treatment. The animals in the low protein group tended to maintain a higher sulfanilamide concentration in the blood.

At necropsy, signs of liver injury were apparent in the low protein group, both those which had had and those which had not had sulfanilamide. All livers of the amino-acid-sulfanilamide group were normal. Slight kidney changes were noted in a number of the sulfanilamide treated animals regardless of ration. Fat-free calcareous concretions were observed in the convoluted tubules in a number of the low protein animals. These did not appear in the methionine treated group. Sulfanilamide apparently had nothing to do with this particular kidney injury. It was a low protein injury, perhaps specifically benefited by the amino-acid methionine.

A number of investigations have been made upon the effect of diet upon the reaction of an animal to poisons. One of interest reported a few years ago was that of Minot, of Vanderbilt, upon the reaction of dogs to carbon tetrachloride, an anthelmintic. Occasionally this drug, after large scale administration to human beings, has caused fatalities. Minot and his associates administered it to dogs which had been maintained upon three different diets as follows: (1) high protein; (2) high carbohydrate; and (3) high calcium. It was noted that the high calcium ration had a protective effect against toxic reactions to carbon tetrachloride, particularly against the liver injury. The effect was the same whether calcium was administered as bones, milk or inorganic calcium salts. This akaline earth was thus good for the liver.

Calcium would seem to be low in many popular dietaries. If one should just now eat all the min-

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erals, vitamins, proteins and fats, milk, eggs, butter, citrus fruits and leafy vegetables, which are believed to be deficient in the usual dietary (carbohydrates are the only great class of foods not on a current crest of laboratory popularity) just the thought of it might cause him to swell up and explode.

However, the practitioner in southern territory should keep the eating tendencies of his patients always in mind, and recall that the average southern dietary is greatly deficient in many life-saving and health-promoting foods. This is necessarily true because of the low per capita income of the southeastern states. In Alabama, for example, figures given in 1929, a presumably good year, show a per capita income for the non-farm population of $527 per year; for the farm population of $141 per year, making an average of $331 per year for the state. Odum groups North and South Carolina, Virginia, Kentucky, Tennessee, Georgia, Alabama, Mississippi, Louisiana, Florida and Arkansas together as similar economically. How can incomes of this size, which are typical of the region, provide fresh meat, milk, eggs, fruits and other foods of high biologic value?

The tendency of the poor in the south, and most of the south is poor, is to corn meal, white flour, molasses and fat salt pork, or a diet not sufficiently different from this basic one to support the best of health; and this should be considered in medication of the large majority of persons who become ill in this part of the country. —*Southern Medical Journal.*

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The film is based largely on clinical material from the Nutrition Clinic, Hillman Hospital, Birmingham, Ala. The cases selected for the most part were not so much those exhibiting the classical syndromes, but rather were of the mild type frequently involving mixed deficiency states and less endemic in character.

A brief discussion of the physiological properties of the individual and better known members of the vitamin B complex introduces the film and serves as a background for the very generous exposition of the various clinical cases that comprise the balance of the picture. Not the least interesting of the features of the film is the marked fidelity of the colors to the dermatological lesions which are reproduced.

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The film, "The Vitamin B Complex", was produced under the supervision of the scientific and medical staffs of E. R. Squibb & Sons, and was reviewed before release by authorities of international repute in the field of medicine and nutrition. There is no advertising in the film which is offered solely as a conservative review of the present status of the subject. Inquiries with reference to the loan of the film may be addressed to E. R. Squibb & Sons, Professional Service Department, 745 Fifth Avenue, New York, N. Y.

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of "pap" and "panada", there had been no noteworthy improvement in the nutritive quality of cereals for infant feeding. Cereals were fed principally for their carbohydrate content.

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TUBERCULOSIS ABSTRACTS

(Continued from page 131)

reactors, only 100 to 150 present any evidence that might be interpreted as representing the primary tuberculosis complex on the x-ray film of the chest. Of the entire 1,000, rarely more than 10 to 15 have, at the moment, lesions in the lungs which cast shadows that might be due to the clinical form of pulmonary tuberculosis. Thus, if we depended entirely on the x-ray film examination, we would overlook 85 per cent or more of the students who actually have tuberculous lesions in their bodies. Each of the 1,000 students who reacts to the tuberculin test is a potential clinical case of tuberculosis some time in life and in the occasional one this form of the disease will actually occur while in school. Therefore, we feel that this group of 1,000 students should be listed and observed from year to year for clinical tuberculosis, just as one lists those who have not been immunized against smallpox or diphtheria as the susceptibles in case of an outbreak of one of these diseases on the campus."

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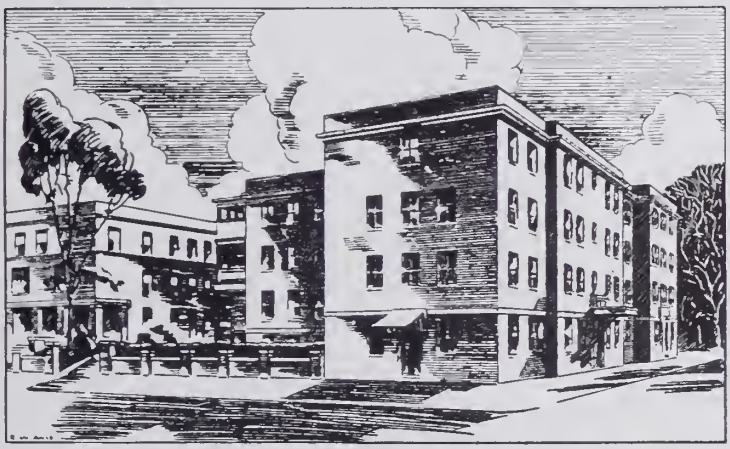

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Experience in eradicating tuberculosis in cattle justifies our faith in the tuberculin test. "The veterinarians of this country have made more than 217,000,000 tuberculin tests on cattle between 1917 and 1939. The carcasses of more than 3,700,000 reactors were examined postmortem, and the accuracy with which the test selected those with tuberculous lesions was little short of miraculous. Indeed, it was only through the tuberculin test as the detective that tuberculosis has been almost eradicated from the cattle herds of this nation."

Of course no tuberculosis program is complete that stops with the tuberculin test. Reactors should have a chest x-ray examination, preferably by film inspection, though the fluoroscope in the hands of an expert may equal the film inspection. Those students with shadows of lesions must be examined in considerable detail and in those with shadows that persist, laboratory examinations, including the search for tubercle bacilli in the gastric contents, must be made.

In answer to the question: "Must students contract tuberculosis while in college?" the author answers: "No, because we have at our command accurate methods of screening out contagious cases of tuberculosis in any group. Therefore, if we keep students under sufficiently close observation, it is with great rarity that one will enter with contagious disease or will develop it on the campus so as to disseminate it to other students. Thus, the students may be prevented from contracting tuberculosis from one another. . . . It is true that the occasional student will become infected through contact with a contagious case entirely apart from the campus. However, in most parts of this country such infections have been reduced to one per cent or less per year. Therefore, few students become infected even in this manner while they are in college."

Tuberculosis in Students by J. Arthur Myers, M.D., Amer. Rev. of Tuber., February, 1941.

The tuberculosis associations in Jackson, Mason and Roane counties are planning to institute monthly tuberculosis clinics in their respective territories. Details for the plan have been worked out and the program is already in operation in Mason and Roane counties. This is a real advance as these counties have previously had only one clinic a year which frequently made it necessary for patients to wait many months for diagnostic service.

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INDUSTRIAL HYGIENE AND THE PRACTICING PHYSICIAN*

By J. WM. CROSSON, M. D.
Charleston, West Virginia

One of the outstanding developments of the present national defense program has been the recognition by the leaders of our nation that health is an essential part of preparedness. The recognition of this fact followed naturally as a corollary to the realization that military mobilization and expansion is impossible without industrial mobilization and expansion. The present industrial expansion has already brought in its wake many new problems in employee health.

Industrial hygiene has not received attention, to any appreciable degree, until the last 25 years. The number of physicians well trained in this field is appallingly small so that it becomes necessary at this time to call upon the general profession to aid in this work. It is the duty, therefore, of every practitioner of medicine to interest himself in industrial health and hygiene. Fortunately, however, unlike many duties which we find ourselves obligated to perform, this one will work to the advantage of most of us.

*Presented February 13, 1941, at a meeting of the Cabell County Medical Society.

THE AUTHOR

Dr. Crosson, Temple University School of Medicine, 1934; residency, Department for Research in Respiratory Diseases, Germantown Hospital; National Institute of Health, U.S.P.H.S.; A.P.H.A.; Conference of Governmental Industrial Hygienists; Director, Bureau of Industrial Hygiene, West Virginia State Health Department.

Industrial hygiene, although a specialty, is one which can be, and should be, practiced by every physician. It rightfully belongs in the field of general practice. This has been the aim of the outstanding industrial hygienists for years, but it has taken a great national emergency to awaken others to the realization of its importance. The specialist in industrial hygiene should be called only in consultation, to conduct detailed or difficult surveys, to perform technical analytical procedures and should be encouraged to spend much of his time in research.

At this point it would probably be appropriate to define industrial hygiene. It may be described simply as the preservation and

improvement of the health of the worker. Please note two things in this definition—the use of the words "preservation" and "improvement" connoting emphasis on prevention, and the absence of the word "industrial." The industrial hygienist or the general practitioner interested in industrial hygiene, is concerned almost wholly in the practice of preventive medicine. His value is measured by the reduction or absence of occupational disease in those workers under his care. Until only a few years ago the emphasis was placed upon treatment and rehabilitation and many would still have it so. This was due chiefly to the fact that our friends, the surgeons, were willing to forget their dignity long enough to enter the factory to discover just how much an extraphalangeal joint or a knee of greater mobility was really worth to a worker. When a patient relates in the quiet confines of your well appointed office that he is employed as a rougher, a lead burner, a jiggerman, a pouncer, a teazer or a pickler, it seems little enough to make an effort to find out what he is talking about. Usually it is an easy task to learn at first hand what your patient really does, merely by a brief visit at his place of employment and the enunciation of a simple request. Frequently, however, it is unnecessary and even inadvisable to actually view the operation, but a careful occupational history will often prove of greater value than the interesting fact, recorded in the family history, that the patient's maternal grandmother died of pneumonia subsequent to a fractured hip after a fall down the back steps in 1904.

INDUSTRIAL WORKER

The second notation I requested you to make in the definition of industrial hygiene was the omission of the word "industrial" before the word "worker." The industrial hygienist is interested in the health of all workers and problems may arise in an office which are just as disturbing and acute as those arising in a busy factory. I recall one instance in which a large office, employing women almost exclusively, installed a new system of fluorescent lighting. Everyone was extremely pleased with the results until some erudite young woman, after reading much, but apparently too little, spread the rumor that the rays from these lamps, being reflected from fluorescent material, were akin to x-rays and therefore were likely to cause irregularities and even permanent cessation of the menstrual cycle. The unrest and excitement in that office was so acute that the new installation was about to be replaced with the old system when inquiry was received concerning the situation by the U.S.P.H.S. Reference to the literature and brief questioning of the workers and management revealed no foundation for such a rumor and in the face of authoritative evidence it died a natural death.

COMMUNICABLE DISEASES

This illustration touches upon another factor to be reckoned with in industrial hygiene, i.e., mental health. Other factors are communicable diseases in the factory and its environs, sanitation, housing and personal hygiene. All these must be considered in addition to the major factors in the prevention of occupational disease arising from lack of control or improper control of gases, vapors, fumes, dusts, excessive temperatures and humidities, from defective lighting, noise, overcrowding and fatigue. Industrial hygiene, therefore appears to encompass a much larger field than at first supposed and in reality it is adult hygiene. This has been recognized to such an extent in one of our neighboring states that the bureaus of venereal disease, tuberculosis, sanitation and industrial hygiene have been consolidated into one division of adult hygiene.

As physicians, most of us consider ourselves interested primarily in treatment of disease, but inspection of our communicable disease statistics will show that more and more of our time is being devoted to prevention of disease. The objectives of industrial hygiene aim at the prevention of occupational disease, of accidents and the conservation of the health of the worker. Employee health, as previously pointed out, is becoming more and

more important every day because of our efforts in the direction of national defense. During the last war it was conservatively estimated that seven workers were required in industry to keep one man in uniform. Increased mechanization and scientific development of our refined implements of war will undoubtedly double this number, so that 12 to 14 workers will be necessary today in order to keep one man in actual military engagement.

UNSKILLED LABOR

Let us remind you also that it takes two to seven years to train a skilled worker and that our yearly average of occupational deaths extends to 17,000 with an additional 75,000 permanent disabilities. In addition to this tremendous loss of industrial production many of our skilled workers will now be called for military service; their ranks will be filled with younger men and those whose physical disabilities prevent military duty, thus filling the industrial field with unskilled labor, and with men not trained to be aware of the industrial hazards which they will encounter. The necessity for the wide application of the principles of industrial hygiene, therefore, is readily seen.

Much of the previous discussion has dealt with generalities. You might well ask, "How does all this affect me, as a private practitioner?" If you will permit the use of a few more statistics, I believe I shall be able to answer that question. In a survey conducted by the U.S.P.H.S. it was found that only 15 per cent of the 50 or more millions of workers in the United States have the advantage of full-time medical services during their working hours; only 29 per cent have the advantage of full-time safety practices; only 33 per cent have access to some sort of nursing care and first aid. The vast majority of our employee population, therefore, seeks the advice of the general practitioner. This is exactly as it should be—provided that we are prepared to properly diagnose and treat such occupational diseases as we are likely to encounter—and to attempt to eliminate the cause, just as in any other disease. The method of elimination of the cause may be different than that to which we are accustomed, but the principle of eradication of disease is the same.

While we are on the subject of the employee and who cares for his health, let us consider two things: (1) The somewhat burning question of the full-time industrial physician. Some of us think we have reason to believe that the industrial physician is doing too much; that he is not confining himself to industrial practice; that he is treating many diseases and conditions which occur outside of the working environment. This is undoubtedly true in certain isolated cases, but in the majority of instances it is not true; or if it appears to be so, there is some good reason for it.

The reason is usually rooted in the point of the following illustration. A certain large company established a broad medical and safety program in one of their plants in a large eastern city. The pre-employment and periodic examination included a serologic diagnosis. In all cases in which the latter was positive the patient was referred for treatment to his own physician or a clinic. His employment depended upon his acceptance and continuity of treatment. The plant physician soon became aware, however, that many of the workers were not receiving the type and quality of treatment to which they were entitled and for which they were paying. As a result it is now the policy of this company to treat syphilis in their own dispensary. The industrial physician is occupied by far too many other matters to want to treat those conditions which should be taken care of outside the plant, but in many instances he has no choice.

NON-OCCUPATIONAL ILLNESSES

The second point I should like to emphasize is very important, especially at this time, and applies to every physician who is not exclusively engaged in the fields of pediatrics, obstetrics or pure research. Non-occupational illnesses, or lost time due to sick absenteeism, accounts for fifteen times as much lost time

as that due to accidents and occupational diseases combined. It accounts for a tremendous loss to the employee, the employer, and to the nation in general, reaching into the millions of man hours of production. We can all recall cases that could have been discharged from one to three, or even more days sooner than the time we had given our consent for them to resume their usual employment. Other factors also enter into this problem, but if all physicians kept constantly in mind the importance of returning his worker-patient to active employment as soon as possible, sick absenteeism could be materially reduced.

OCCUPATIONAL HAZARDS

Just as no one expects a general practitioner to be an outstanding internist, so it is not expected that he cover the whole field of industrial hygiene or health. But is it too much to expect him to know something about the possible hazards his patients might encounter in places of employment in his district? Or is it too much to ask the part-time industrial physician to make periodic trips through the plant or plants with which he is associated and really learn what the operations are, what hazards might be present and spend a little thought on the improvement and conservation of the health of the manpower under his care?

A casual inspection of the industries of Cabell county indicates that your patients are exposed to one or more of the following potential occupational hazards:

Extremes of temperature, organic and inorganic dusts, carbon monoxide, sulphur dioxide, ultraviolet and infrared rays, fumes and vapors from amyl acetate, benzine and benzol, methanol, analine, formaldehyde, hydrofluoric and hydrochloric acids, cadmium chromium, tellurium, manganese, antimony, lead, and arsenic.

Many are also exposed to materials capable of producing dermatitis.

Let us suppose that you are genuinely interested in industrial health and decide to venture cautiously into this field. What support can you rely upon other than a few reference books or reprints that might be available to you in addition to your own intestinal fortitude?

Through the unremitting and diligent perseverance of a relatively small number of men, a strong and solid structure has been erected within the confines of organized medicine itself. In addition to this organization a number of outside agencies are always ready and eager to aid any physician interested enough in the welfare of his patients to call upon them.

The assistance nearest at hand is the local medical society's committee on industrial health. The members of this committee should be helpful in assisting you over some of the pitfalls and dangers which have not been mentioned in this discussion; in directing the course of ethical industrial practice in your community; in persevering efforts to acquaint local industry with the importance of employee health together with the financial value to the employer to be gained through the application of a practical medical and safety program; in direct consultation or by referral to a consultant or other agency for solution of diagnostic problems or in the conduct of special technical procedures, and in the stimulation of interest in industrial medicine within your own local society.

COMMITTEE ON INDUSTRIAL HEALTH

Your state medical society's committee on industrial health has the same functions, but on a broader and more general scale. This committee has just recently been reorganized under the leadership of your own Dr. J. J. Brandabur, who has already prepared a very interesting program for you during the state medical convention at Charleston in May.

This committee is in direct communication with the Council on Industrial Health of the American Medical Association. Your journal has devoted more and more space to industrial medicine, its practice, purpose and importance, in the last few years. Some very interesting and enlightening articles will shortly appear in the report of the proceedings of the

Third Annual Congress on Industrial Health which was sponsored by the council.

Supporting the practitioner venturing into the field of industrial health are the governmental agencies. The one nearest at hand is your local health officer, who will, I hope, be enlisted in this crusade. As yet, however, no concentrated effort has been made in this direction, but he should have a definite part in the program of industrial health and at least perform the duties of a liaison officer between the physician and the Bureau of Industrial Hygiene of your State Health Department. This is the agency from which you are cordially invited to request most of your support in this new venture.

SERVICES

Through its many affiliations and facilities consisting of trained personnel and of special equipment the Bureau of Industrial Hygiene is qualified to dispense the following services:

1. Consultant service to medical supervisors, private physicians, compensation authorities, and other state agencies regarding illness affecting workers.
2. Free use of necessary laboratory services of both a clinical and a physical nature.
3. Consultation with medical advisors and plant management regarding needed corrections of environmental conditions.
4. Advice to the medical supervisor and to management as to the relative toxicity of materials or processes, and advice concerning new materials prior to their introduction into the industry.
5. Assistance in developing, maintaining, and analyzing absenteeism records.
6. To provide detailed and specific information on toxic substances and harmful conditions.

Closely associated with the Bureau of Industrial Hygiene of your State Health Department is the Division of Industrial Hygiene of the National Institute of Health, U.S.P.H.S. Here is gathered the experiences of all the states and is one of the chief storehouses of information on industrial hygiene. In addition a continuous stream of practical research in this field is produced by the staff of nationally recognized leaders in industrial health and hygiene.

These are the supports upon which you can confidently depend and which you are strongly urged to utilize to their full capacity.

In conclusion permit me to quote, as a summary, part of an editorial appearing in the *Journal of the A. M. A.*, January 4, 1941.

"Since the private practitioner treats all non-occupational causes of lost time and a majority of occupational causes as well, reductions in industrial absenteeism rest largely in his hands. He should extend his acquaintance with industrial exposures and his competence to correct them. He should report injuries and diseases promptly to the official agencies responsible for their control and he should call on them for advice and consultation whenever local facilities for such services are incomplete or absent."

Cyst in Finger Joint

The first American case and the sixth in medical literature of an epithelial (outer skin and mucous membrane covering) cyst enclosed in the bony part of an end joint of a finger is reported in *The Journal of the American Medical Association* for March 22 by Samuel C. Yachnin, M.D., Passaic, N. J., and Frederick Summerill, M.D., Middletown, N. Y.

They say there are two possible explanations of its origin, either congenital (born with) malformation with misplacement of the epithelial cells during the embryo stage of life, or an injury which implants the cells in the bony structure.

In each of the six cases reported there was a history of a crushing or penetrating injury which damaged the nail bed. C. Friedländer, the proponent of the first theory, claims that the misplaced cells are stimulated to growth by injury. However, Drs. Yachnin and Summerill state that "it is difficult to accept the view of congenital origin, for trauma (injury) was a constant finding. . . . We feel, therefore, that these tumors are caused by the implantation of epithelial cells into the bone as a result of the injury. This could take place through the smallest kind of a fracture or even by transmission along the vascular (blood vessel) channels."

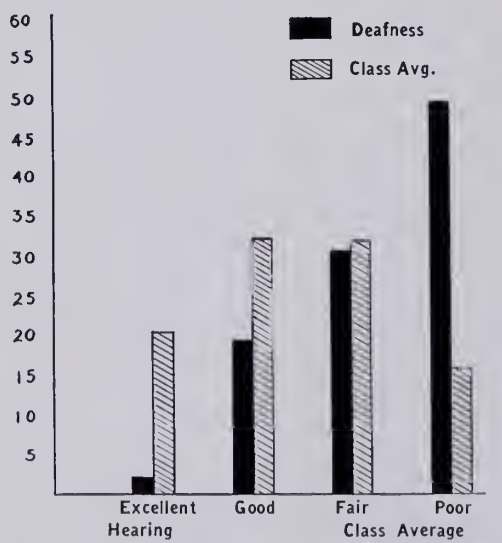
THE RELATION OF PHYSICAL DEFECTS TO SCHOLASTIC STANDING

B' A. C. WOOFTER, M. D.
Parkersburg, West Virginia

THE purpose of this survey was to determine whether or not certain defects constitute a scholastic handicap. In studying this problem in 1939 certain percentages favored the view that the best students were in the normal group.

The school medical department wanted to learn whether or not time was being wasted on examination, discovery of defects, and insistence upon correction of abnormalities. It is essential that the department be able to demonstrate that any advised corrections shall be likely to benefit the child, especially in his school work. During the next few years an effort will be made to obtain detailed information in regard to any improvement following such correction.

Per cent of children with deafness having a class standing of excellent, good, fair, or poor compared with the class average.



Hearing

Excellent . 1 in 53— 1.8%
Good .....10 in 53—18.8%
Fair .....16 in 53—30.1%
Poor .....26 in 53—49.0%

Class Average

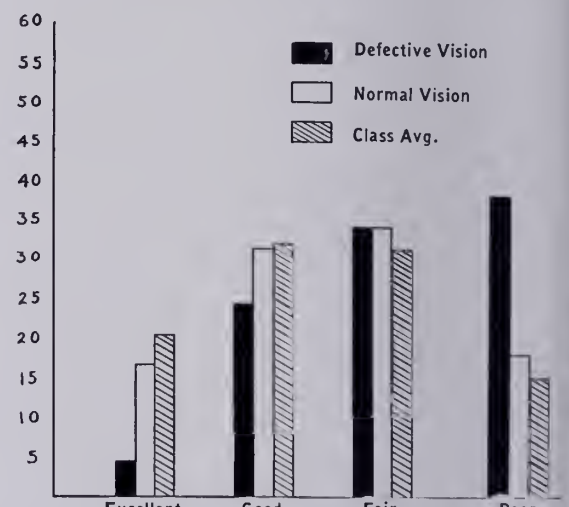
Excellent ...20.2%
Good 32.2%
Fair 31.9%
Poor 15.1%

The physical defects were listed separately along with the principal's estimation of the individual class standing for the past semester, whether excellent, good, fair or poor. These were plotted one against the other in percentages, and compared and contrasted with a like number of normal pupils. Certain children were of necessity eliminated due to circumstances, such as multiple defects, absences from school, etc.

THE AUTHOR

Dr. Woofter, University of Michigan School of Medicine, 1933; postgraduate, Harvard and Johns Hopkins; Camden-Clark and St. Joseph's Hospital staffs; Fellow American College of Physicians.

Per cent of pupils having 20-40 vision or worse with a class standing of excellent, good, fair, or poor compared with students having normal vision and the class average.



20-40 Vision

Excellent .. 4 in 93— 4.3%
Good .....23 in 93—24.7%
Fair .....31 in 93—33.3%
Poor .....35 in 93—37.6%

Normal Vision

Excellent .26 in 153—16.9%
Good ....49 in 153—32.0%
Fair .....51 in 153—33.3%
Poor .....27 in 153—17.6%

Class Average

Excellent 20.2%
Good 32.2%
Fair 31.9%
Poor 15.1%

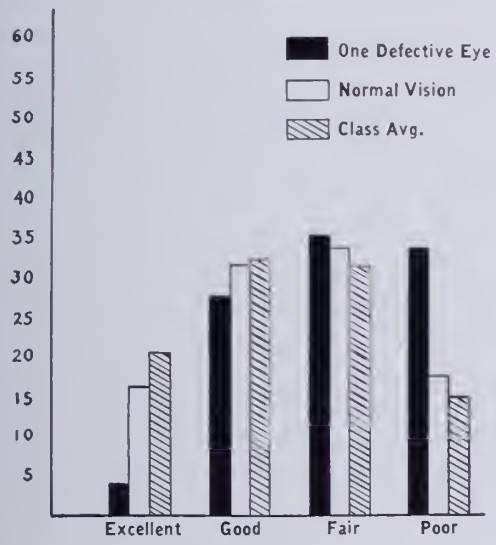
The best approach was considered to be by the use of relatively large numbers of students, but this has been limited by financial considerations, since the department has not

had additional clerical help. However, a total of 641 defective children were studied. These students are as intelligent as any unselected group could be.

The defects included in this survey were as follows: Visual acuity of 20 40 or worse, infected tonsils, malnutrition, deafness, heart disease (rheumatic), and unclassified defects.

Visual Defects: All pupils in this group were examined by the use of the Snellen chart at twenty feet, using adequate lighting.

Per cent of pupils having 20-40 vision in one eye with a class standing of excellent, good, fair, or poor compared with students having normal vision and the class average.



One Eye 20-40

Excellent	2 in 68— 2.9%
Good	19 in 68—27.9%
Fair	24 in 68—35.3%
Poor	23 in 68—33.7%

Normal Vision

Excellent	26 in 153—16.9%
Good	49 in 153—32.0%
Fair	51 in 153—33.3%
Poor	27 in 153—17.6%

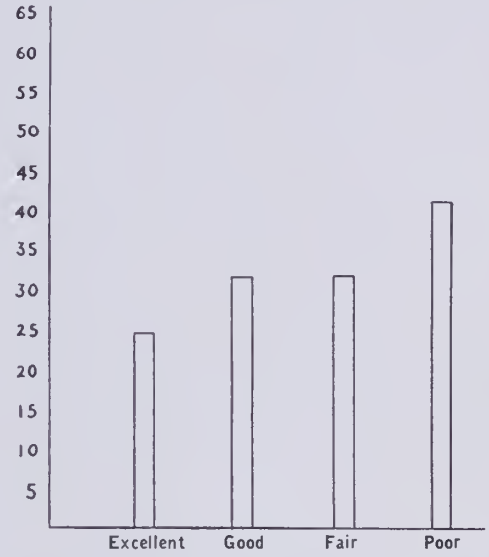
Class Average

Excellent	20.2%
Good	32.2%
Fair	31.9%
Poor	15.1%

Malnutrition: This group included children six pounds or more underweight for age and height according to the United States Public Health Service charts.

Deafness: All children were included who could not hear a large watch ticking at one and one-half feet.

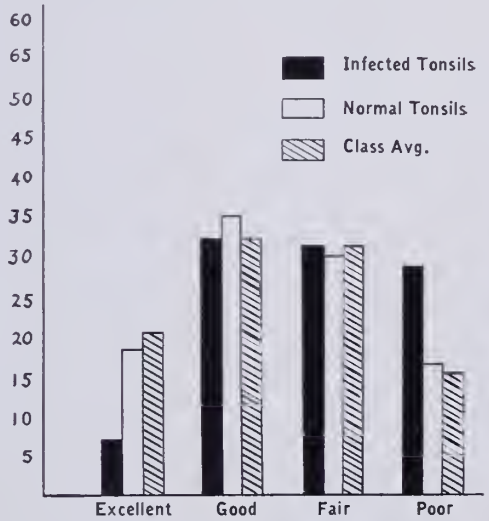
Per cent of eye defects among excellent, good, fair, and poor students (231 pupils).



EYE DEFECTS

Excellent	9 defective of 37—24.3%
Good	24 defective of 74—31.6%
Fair	24 defective of 76—31.6%
Poor	18 defective of 44—40.9%

Per cent of children having infected tonsils with a class standing of excellent, good, fair, or poor compared with normal children and the class average.



Infected Tonsils

Excellent	15 in 213— 7.0%
Good	69 in 213—32.3%
Fair	68 in 213—31.9%
Poor	61 in 213—28.6%

Normal Tonsils

Excellent	29 in 159—18.2%
Good	56 in 159—35.2%
Fair	48 in 159—30.1%
Poor	26 in 159—16.3%

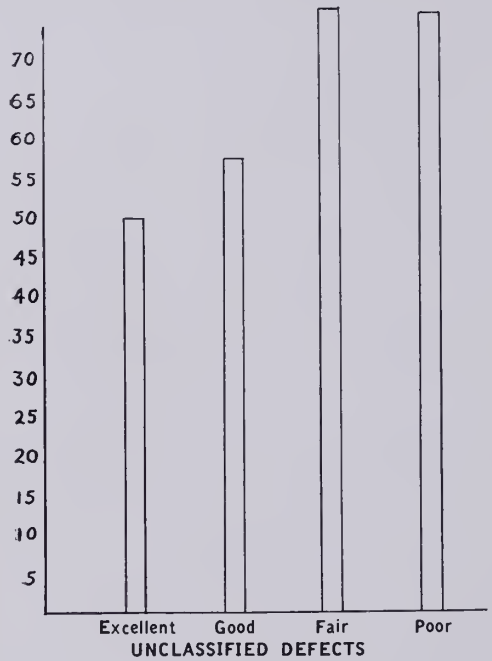
Class Average

Excellent	20.2%
Good	32.2%
Fair	31.9%
Poor	15.1%

Heart Disease: All of these had a well compensated mitral stenosis and insufficiency.

Infected Tonsils: Criteria for infected tonsils were: Repeated tonsillitis, enlarged cervical glands, and the general appearance of the tonsils. No case was considered that did not present an adenopathy.

Per cent of unclassified defects among excellent, good, fair, and poor students (230 pupils).

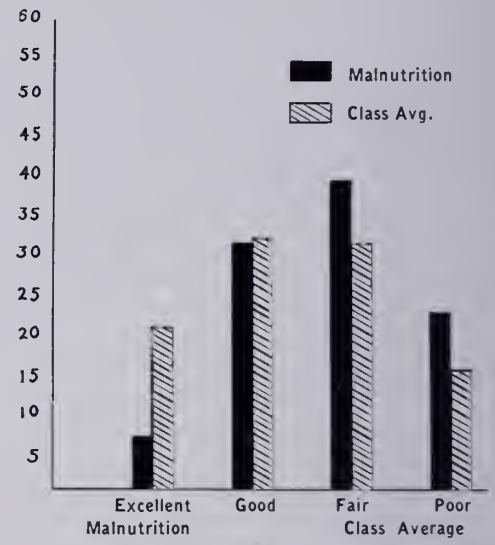


Excellent .....18 defective of 36—50.0%
Good .....42 defective of 73—57.5%
Fair .....58 defective of 76—76.3%
Poor .....34 defective of 45—75.5%

The most striking deviation from the average was found in a small group of pupils with deafness in one or both ears. Excellent pupils represented only 1.8 per cent of the total of 53, while 49 per cent were classified as poor. The only explanations that could be advanced were an inability of the child to fix his attention while not being able to hear the teacher, and an increasing sensitiveness present in a large proportion of deaf individuals. Students falling into this category present a difficult situation. Treatment of the condition will not in most cases be curative. However, during the coming year an educational and corrective program is being planned in an attempt to improve their scholastic standing.

The second most serious scholastic handicap is defective vision. The students inability to read the writing on the blackboard and blurring at reading distance are conducive to

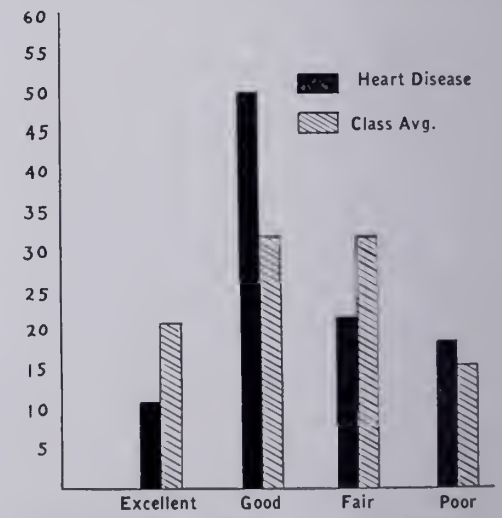
Per cent of students with malnutrition having a class standing of excellent, good, fair, or poor compared with the class average.



Malnutrition		Class Average	
Excellent	10 in 138— 7.2%	Excellent	20.2%
Good	44 in 138—31.8%	Good	32.2%
Fair	53 in 138—38.4%	Fair	31.9%
Poor	31 in 138—22.5%	Poor	15.1%

lack of classroom attention, poor home work, and failing grades. There are several considerations in regard to correction of visual

Per cent of children (a small group) with rheumatic heart disease having a class standing of excellent, good, fair, or poor compared with the class average.



Rheumatic Heart Disease		Class Average	
Excellent	3 in 28—10.7%	Excellent	20.2%
Good	14 in 28—50.0%	Good	32.2%
Fair	6 in 28—21.4%	Fair	31.9%
Poor	5 in 28—17.8%	Poor	15.1%

defects. Many children will not wear lenses even if they are obtained; this is especially true of the indigent group. Others are financially unable to get adequate refractions, while occasionally parents purposely neglect correction. With the use of the Snellen chart at twenty feet defects greater than 20/40 in one or both eyes may be regarded as significant. This is shown by the fact that our students with errors of 20/40 or more in both eyes varied from 4.3 per cent excellent to 37.6 per cent poor. With one defective eye 2.9 per cent were classed as excellent and 33.7 per cent as poor. Minor deviations in percentage can be disregarded.

The preliminary survey indicated that in one semester including a group of 56 students, those with infected tonsils lost an average of seven and one-fourth days, those with enlarged tonsils four and five-eighths days, and with normal tonsils four and one-tenth days. Conversely, with the same number of students, those with excellent grades lost an average of two and one-half days, and the poor students twelve and one-tenth days per semester.

The class standing of 213 pupils with infected tonsils was less satisfactory than the class average or those without any abnormality. This may be explained, at least in part, by increased absences.

One group of 230 students reported in the preliminary survey contained 152 with unclassified defects, minor or major, with an increase of 25.5 per cent among the poor students over those of excellent standing.

Speech defects represent such a small group that sufficient numbers could not be found for tabulation.

In conclusion, this survey was made in an attempt to demonstrate whether or not physical defects are a definite handicap to students in primary schools. Due to methods employed absolute accuracy in percentage is not claimed. However, many more defective pupils will be found in the poorer classification when considered in contrast to the class average.

Virus of New Lung Disease

Discussing a recent announcement that J. M. Weir, M.D. and F. L. Horsfall, M.D., of the International Health Laboratories, New York, have been able by means of research carried on in New York and the British West Indies to isolate and identify the specific virus of the new type of lung disease known as "acute pneumonitis," *The Journal of the American Medical Association* for March 22 says that "aside from its epidemiologic importance the work of the two men is noteworthy and may long serve as a model of speed and effectiveness in international medical research, an inspiring example of preparedness for future epidemiologic emergencies."

Epidemics of the disease, since it was first described five years ago "have been reported with increasing frequency in a half dozen American states as well as in England and France, from which it is apparent that the disease can assume pandemic (widely distributed) proportions," *The Journal* says.

It is characterized by a remarkably high sickness rate and in some institutions or localities over 50 per cent of all persons have contracted the disease. No deaths have been reported so far in uncomplicated cases.

"The apparent recent increase in the frequency of this disease and its tendency to become pandemic rendered it of sufficient importance to warrant vigorous attempts to determine the causative agent," *The Journal* says.

About a year ago Drs. Weir and Horsfall attempted to infect all of the usual laboratory animals with the disease but without success. In the hope of finding a susceptible animal, it was finally decided to try the mongoose, an animal available in abundance in the Caribbean islands but whose importation to the United States is prohibited. By modern methods of transportation and communication, however, it was found feasible to divide the work between the New York laboratory and the British Tuberculosis Research Association at Kingston, Jamaica. Material from victims of the disease in New York was transported to Kingston and material from the mongoose was sent to New York for analysis.

"Studies of methods of infection show experimental virus disease in the mongoose readily spread by contact, which evidence seems complete that the mongoose infecting virus is the cause of the current incipient pandemic of acute pneumonitis."

SUBTOTAL INFARCTION OF KIDNEY*

(Nephrectomy: Cure)

By J. M. EMMETT, M. D. and M. L. DREYFUSS, M. D.
Clifton Forge, Virginia

RENAL infarcts usually are considered a problem of internal medicine and even more of the pathologist who discovers them at the autopsy. These infarcts, as a rule, are complications of a systemic disease with the heart or the blood vessels as main pathogenic factors. Bacterial and rheumatic endocarditis, cardiac and vascular thromboses, and arteriosclerosis are present in almost all cases and are responsible for the eventual fatal outcome, the renal infarcts playing a major or minor part in the picture. Barney and Minz (1933) and Schildt (1933) have expressed considerable skepticism concerning the possibility of a correct diagnosis and the therapeutic significance of such. In recent years, however, several papers have been published which deal with the diagnosis and surgical therapy of renal infarcts. These reports, while covering but a small number of cases, indicate that total or subtotal aseptic infarction of one kidney, due to occlusion of the renal artery or its major branches, is amenable to diagnosis and surgical therapy with partial or complete success.

THE AUTHORS

Dr. Emmett, Medical College of Virginia, 1915; interned Sheltering Arms Hospital, Richmond, New York Polyclinic; postgraduate, New York Postgraduate Hospital; Chief Surgeon C. & O. Railway Company; Chief of Staff, C. & O. Hospital, Clifton Forge; F. A. C. S., Southeastern Surgical Society.

Dr. Dreyfuss, graduated Frankfurt, Germany, 1931; postgraduate, Berlin, Germany; Florence, Italy, and New York; pathologist, C. & O. Hospital, Clifton Forge.

CASE REPORT

Mrs. H. G. H., a 50-year-old white, married female, was admitted to the surgical service of this hospital on June 3, 1940. History: According to the patient, her spleen had been removed 23 years previously because of enlargement of the organ, jaundice and anemia. During the following years she had enjoyed good health. Her husband and three children were well. One son, aged 19, has a large spleen, but no anemia or jaundice.

For the past three years the patient had suffered from pain in the right upper abdomen with radiation to the right shoulder. She was nauseated, but never jaundiced. Cholecystectomy had already been advised two years before, but had been refused. During the past few months, however, the pain had become more persistent and more severe and she decided to undergo the operation. For about five years she had suffered from occasional shortness of breath upon exertion.

CLINICAL EXAMINATION

The patient was a well developed, markedly obese white female. Except for slight tenderness in the right upper quadrant, and the old scar from the splenectomy, the physical examination was not remarkable. The blood pressure was 180/94. X-ray examination demonstrated a diseased gall-bladder. An electrocardiogram did not show any significant changes. The urine and blood were normal. The serological tests for syphilis were negative.

A cholecystectomy and appendectomy were performed on June 8. The operation did not present any technical difficulties. The gall-bladder was found chronically inflamed on microscopic examination.

On the third day after the operation, the patient felt very uncomfortable and cold. An irregular cardiac rhythm and a pulse deficit were noted, and digitalis was given for two days. Objective and subjective disturbances subsided and the digitalis was discontinued. The further course was uneventful until the twenty-first, two weeks after the opera-

*From the Departments of Surgery and Pathology, Chesapeake and Ohio Hospital, Clifton Forge, Virginia.

tion, when the patient began to complain of severe continuous pain in the right kidney region which required morphine for partial relief. The patient was nauseated and vomited repeatedly. The urine contained 10 pus cells and three granular casts per high power field. An x-ray film of the lung showed partial atelectasis of the left lower lobe. The pain persisted and on the following day, a cystoscopic examination was done. The bladder was found slightly inflamed. Only very little thick material was seen coming from the right ureter and a catheter was left in for six hours. Only a few drops of secretion were obtained. Microscopic examination showed numerous pus cells and a few granular casts. During the next three weeks, it was attempted repeatedly to drain the right kidney pelvis, but apparently there was no secretion of urine at all from this side. A pyelogram showed a slightly enlarged but otherwise normal kidney shadow with somewhat elongated calices. No stones or any other evidence of obstruction were found. Blood chemistry did not show any nitrogen retention. However, the general condition of the patient grew worse. She had marked meteorism but no ileus. A moderate secondary anemia developed. The leucocyte count rose to 12,400 per cm. The temperature ranged between 99.6 and 101 F., rising occasionally to 102, and reaching a maximum of 103.5 F. On one occasion, non-hemolytic streptococci were cultured from material from the right kidney pelvis. Repeated blood cultures were negative. It was felt, that the marked impairment of the general condition made surgical intervention mandatory. Nephrectomy was performed on July 15, three and a half weeks after onset of the renal symptoms, the preoperative diagnosis being pyelonephritis or carbuncle of the kidney. The operation was uneventful. The postoperative course was somewhat stormy due to an infected incision, but on August 12, the patient was discharged, considerably improved.

She was seen again on November 6, and was found in good health. She still complains of slight shortness of breath upon physical exertion.

DESCRIPTION OF SPECIMEN

The kidney was moderately enlarged, measuring 11.5 x 6 x 6 cm., and very soft. The capsule could be stripped with some difficulty. The surface was smooth except for a few coarse scars. Four-fifths of the organ was a dull pale yellow; one-fifth, near the lower pole, was purplish, firmer and depressed. In this portion, the renal structure could be made out on the cut surface. The remainder was necrotic and the internal layers were partly sequestrated, a fissure separating them from the outer layers. The mucosa of the pelvis was dull and hyperemic. The attached piece of ureter was thick-walled and its mucosa was dull red. The renal artery was normal. It divided into two branches. The posterior branch was occluded by a firm red clot which was adherent to the wall and could be traced for 0.9 cm. The other branch and the renal vein were free.

Microscopic Examination: Almost the entire organ was necrotic. There was no inflammation except for the marginal area. The tissue near the lower pole was well preserved but severely inflamed. Here, too, areas of necrosis were present. The clot in the renal artery showed beginning organization. The wall of the artery and the renal vein were not remarkable. The wall of the ureter was considerably inflamed.

Diagnosis: Subtotal infarction of the right kidney by (thrombotic or embolic) occlusion of the renal artery.

COMMENT

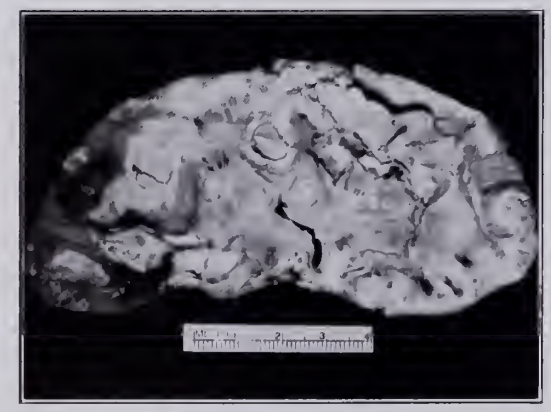
Aschner (1922) was the first to discuss the diagnostic and therapeutic aspects of massive aseptic infarction of the kidney. He was followed by Metzler (1928). The condition was diagnosed correctly before operation by Adler Racz (1933). Westerborn (1937) also diagnosed embolism of the renal artery correctly and attempted to crush manually the embolus which he found in the extrarenal portion of the artery. However, he was forced, because of rising NPN values, to operate again and to remove the organ which now gave the characteristic picture of a contracted kidney. Staehler (1938) operated for a suspected hypernephroma. He found instead a kidney with massive infarction and did a successful nephrectomy. Hoesel (1939) made a correct preoperative diagnosis and removed the infarcted kidney. His patient was cured for the time being. Vogelsang (1940) also made the correct diagnosis, but his patient was beyond the stage for surgical relief. The diagnosis was confirmed by the autopsy findings. Finally, a correct clinical diagnosis was made by Foley. He intentionally did not operate; the patient became well and a pyelogram taken a year and a half later showed that the kidney and the pelvis had almost

completely disappeared. The author considers this an autonephrectomy and advocates, on the basis of his observation, that such cases should be left alone.

DIAGNOSIS

In reviewing the case histories of these authors, the following criteria seem to be of importance in making the diagnosis of massive infarction of the kidney (small infarcts may present an entirely different picture):

1. Pain, which is present in almost all cases. It usually is less severe than renal colic and more continuous. It is less pronounced in cases in which the occlusion of the artery occurs slowly.
2. Unilateral anuria in the presence of normal x-ray findings. This, of course, is of paramount importance. The anuria is established promptly and is complete. The kidney shadow may be somewhat larger than normal, due to the swelling of the organ in early necrosis, but the outlines are regular and the calices are normal.
3. Vomiting is present in most cases.
4. Meteorism is frequent. Ileus, however, does not develop.
5. Fever is present in the majority of cases but not regularly. It is moderate.



Subtotal infarct of right kidney. Note the clot in the renal artery.

Such a complex of symptoms is particularly suggestive in the presence of cardiac or vascular conditions which are known to produce embolisms. In all cases referred to above, such a condition was found. In the absence of any demonstrable cardiac or vascular pathology, the diagnosis of renal infarction becomes extremely difficult, if not impossible. We are at a loss to explain the cause of the arterial occlusion in the case here presented. Although the patient had complained of slight dyspnea on exertion, the clinical examination and the electrocardiogram failed to demonstrate any cardiac lesion. The patient had a moderate hypertension which seemed to be well compensated. Whether the slight circulatory disturbance which had occurred ten days before the infarction could be responsible for the embolism, is highly questionable. The artery itself and the renal vein did not show any pathological changes. Careful blood studies did not reveal any deviation from normal, particularly in regard to clot retraction and number of platelets.

Thrombosis of the renal vein usually causes severe hematuria and rarely is the anuria complete. The temperature is considerably elevated. Small renal infarcts also are usually followed by hematuria. Nephrolithiasis and tumors may be differentiated according to the well known criteria.

It is perhaps less important to differentiate between these conditions than to prevent an unnecessary operation for a suspected ileus or cholecystitis in a patient with chronic heart disease. It also is noteworthy that, in some cases, laparotomy for ileus or cholecystitis did not detect any such lesion and that careful investigation of the kidney resulted in successful removal of the infarcted organ despite the original wrong diagnosis.

While in perhaps the majority of cases the general condition of the patient excludes any surgical therapy, there remains a group of cases in which operation is indicated, because previously no embolic phenomena has been observed, or in which the severity of the local symptoms makes it necessary. Nephrectomy is the procedure of choice. Embolectomy has been considered and tried by some authors. However, experiments (Westerborn) have shown that the kidney is very sensitive to

lack of oxygen and that one hour and a half after ligation of the renal artery, the tissue is damaged beyond repair. As to autonephrectomy, the increasing literature on hypertension due to unilateral kidney disease, does not encourage such a procedure.

SUMMARY

A case of subtotal infarction of the right kidney (due to occlusion of the renal artery) successfully treated by nephrectomy, is reported. A survey of the cases reported in the literature is given. Diagnosis, differential diagnosis, and therapy of massive infarction of the kidney are discussed.

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THE LATE TOXEMIAS OF PREGNANCY

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THIS subject is one of extremely broad scope, and of equally great importance. This importance is shared by the internist, the surgeon, and the various special fields of practice, because sooner or later every physician will come in contact with the actual condition, or one of the early or late complications following in the wake of some few of these cases. The purpose of this paper is not to discuss in any great detail the theoretical side of the subject, but to dwell more on some of its practical aspects, incorporating some of the more recent advances in thought in this field.

The subsequent discussion and case presentations will be limited to "eclampsism", which includes preeclampsia and eclampsia, i. e., the particular toxic state which underlies the convulsions and coma of late pregnancy.

First, the brief outline of three cases of acute toxemia will be presented and, second, some of the more important points relative to this condition will be discussed.

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CASE PRESENTATIONS

Mrs. E. P., a white, primigravida, age 21 years, presented herself for prenatal care at eight weeks duration of pregnancy. Her previous history was entirely non-contributory; general physical examination was satisfactory in every respect; pelvic measurements were within normal limits; urinalysis, blood count and Wassermann were normal. The patient was only poorly cooperative as to her prenatal visits throughout her course. Her early prenatal course was entirely normal with the exception that her weight was practically constant during the first six weeks under observation. At the end of this period she began to gain weight within satisfactory limits, and the rest of the course was normal until she arrived at the thirty-fourth week. At this time the weight gain suddenly increased, and her blood pressure which had been averaging 110/70 increased to 125/84. She had no urinary albumin at this time. The patient was put on a salt-free diet, and rest periods each day were increased. She was seen again in the office at the end of the week with no further progress of any untoward symptoms or signs. The patient was asked to return at the end of another week, but did not return for two and one-half weeks. At this time all the signs of a fulminating preeclamptic toxemia were present, elevated blood pressure 170/110, marked edema, urinary albumin four plus, headache, vertigo and nausea. She was immediately sent into the hospital.

After admission to the hospital she received one-fourth gr. morphine, 400 c.c. 25 per cent glucose and four c.c. 50 per cent magnesium sulphate intravenously. One hour later she had a typical eclamptic convulsion followed by another in twenty minutes. The patient was given approximately 300 grams glucose daily in 25 per cent solution, rectal paraldehyde and occasional small doses of morphine as sedation, plus 50 per cent solution magnesium sulphate. Under this therapy she had no further convulsions. She remained semi-comatose, the blood pressure remained elevated to its original level, the urinary output was 300 c.c. for the first 24 hours, and then improved slightly. The urinary albumin did not improve, and there were many casts and red blood cells present in the urine. The N.P.N. was 30 mgm. per hundred c.c. of blood and the CO^2 combining power 45. Examination of the retinae showed spasm of vessels, A.V. compression, and some segmentation.

IMPROVEMENT NOTED

The patient was treated for four days in the manner outlined above. One sign of improvement was an increase in urinary output. The patient showed no signs of heginning lahor. The fetal heart was good throughout, and the vertex still floating above the pelvic brim. The duration of pregnancy was about thirty-eight weeks at this time.

On the fifth day following admission, the patient was delivered hy laparotrachelotomy under local one per cent procaine anesthesia. A living child was obtained. During the next several days the patient was kept under mild sedation and given daily hypertonic glucose solution. Her improvement was constant, and at discharge on the sixteenth postoperative day, the blood pressure had returned to within normal limits. There was no edema. The urine showed one plus albumin, no casts and no red blood cells. The patient had no demonstrable pathology when checked three and six months postpartum.

Mrs. V. T., a thirty year old, white, primigravida, was first seen in the office January 6, 1940. Family and past history were unimportant. Physical examination was entirely normal, and pelvic measurements adequate. Duration of pregnancy, ten weeks. Weight at this time, 135 pounds. Urinalysis, blood count and Wassermann were normal.

After the first six weeks under observation the patient had a slightly increased weight gain above normal. That was adequately controlled until the thirtieth week by diet alone, plus sodium chloride limitation. Until the thirtieth week the blood pressure showed no rise, and there was no urinary albumin.

On June 15 the patient showed a marked increase in weight gain since her last visit. Blood pressure had increased to 130/86, and the urine showed a trace of albumin. Patient was immediately placed on a rigid sodium chloride limited diet. There was a moderate limitation of fluid intake. The patient was advised to take much rest during each day and was placed on small doses of phenobarbital. She went along very well on this regime during the next two weeks, hut on July 2 she made another marked jump in her weight with slight ankle edema. Blood pressure was 138/90; urine albumin showing one plus with no casts or red cells. Patient was put completely at rest in bed at home on limitation of fluids and salt. Two days later her blood pressure had increased to 150/94, and the urinary albumin was two plus. There was no increase in her edema.

She was admitted to the hospital July 4, and was put at bed rest on a salt-free diet with fluids partially limited and carbohydrate intake increased. Three hundred c.c. of 25 per cent glucose and four c.c. 50 per cent magnesium sulphate was given twice daily and moderate doses of phenobarbital. During the next four days the patient showed some improvement; a decrease in blood pressure to 130/90, and no increase in edema. However, urinary albumin remained at two plus, with a few casts. The urinary output remained within normal limits, and the N.P.N. 25 mgm. per 100 c.c. of blood. Retinal examination showed arteriolar spasm, A.V. compression, and slight segmentation.

LAPAROTRACHELOTOMY

On the fifth day after admission the patient began to complain of a headache. Her blood pressure rose to 148/100, the urinary alhumin increased to three plus, and many casts were present. During the following two days her condition became progressively worse, the hlood pressure going to 170/104, the urinary albumin to four plus, with casts and a few red cells.

The fetal heart was heard throughout. Duration of pregnancy was estimated to be thirty-six weeks. The presenting part was floating above the pelvic inlet, and the cervix was long and undilated. Delivery was done on July 16 by means of a laparotrachelotomy under one per cent procaine anesthesia

and barbiturate sedation. A living child weighing six pounds was obtained. Hypertonic glucose was given during her immediate postpartum period. She received small doses of morphine for several days after operation. Her postpartum course showed progressive improvement, and upon discharge on the fifteenth postoperative day, her blood pressure had returned to 130/86, and there was no edema. The urine showed albumin one plus, no casts or red cells. During the following four months her urine became negative and the blood pressure remained normal.

Mrs. G. J., a white, 24-year-old, primigravida, was admitted to the hospital on October 25, 1940, with pregnancy at term, having had several convulsions at home. She had never been seen by me prior to this time, having been referred from one of the neighboring counties.

History obtained from her family and doctor revealed the patient had had a marked weight gain of approximately 40 pounds during her pregnancy, and about two weeks prior to the onset of convulsions she began to complain of severe headaches and showed a rather marked general edema. The blood pressure became elevated. The urine showed much albumin. She was kept in bed at home, had general diet and fluid limitation. Her condition became a little better. The day prior to the onset of convulsions her headache and edema became more pronounced. She developed epigastric distress with nausea. The urinary albumin was four plus. She was given morphine at home. Hospitalization was advised, but this was not immediately carried out.

CONVULSIONS

During the afternoon of the date of admission to the hospital the patient began to have convulsive seizures. When admitted to the hospital she was having convulsions at ten minute intervals, was in deep coma between convulsions with the pulse rate 130 per minute, temperature 102 rectally, and blood pressure between convulsions 180/120. There was moderate cyanosis, marked generalized edema, and slight laceration of the tongue. The urinary albumin was four plus with many casts and red blood cells in the catheterized specimen.

The fetal heart was heard in the left lower quadrant of the abdomen. The presenting part was not engaged in the pelvis, and there were no signs of labor. The patient was immediately put in a quiet room, given one-fourth gr. of morphine and paraldehyde by rectum, 300 c.c. of 25 per cent glucose and six c.c. of 50 per cent magnesium sulphate intravenously, and oxygen was administered. The convulsions subsided one hour following admission, and completely ceased by the end of the second hour. However, she remained in deep coma with rapid pulse and some cyanosis, and blood pressure ranging about 180/120. Her blood chemistry showed N.P.N. 40 mgm. per 100 c.c., a slight rise in the uric acid, and the CO^2 combining power 35. Patient was given 300 c.c. of 25 per cent glucose and four c.c. of 50 per cent magnesium sulphate every four hours during the first 24 hours. She also received rectal paraldehyde and some small doses of morphine at intervals during this period. There was no return of the convulsions.

CONDITION IMPROVED

The second day her general condition improved slightly with some periods of consciousness. The CO^2 combining power rose to 45. There was no drop in her blood pressure and the urinary findings remained the same. The total output during the first 36 hours was 500 c.c. However, the patient developed a complete right side hemiplegia. She was carried along for the next three days on a regime of hypertonic glucose of 25 per cent solution several times daily, 50 per cent solution magnesium sulphate twice daily. Rectal paraldehyde was given at intervals as indicated. Her cyanosis improved and completely disappeared by the end of this period. The urinary output improved moderately, but the albumin still remained four plus with many casts and red blood cells present. Edema continued pronounced. Her periods of consciousness increased and the CO^2 combining power rose to 50. Blood pressure level rose during this period to about 200/130. Patient complained constantly of headache during periods of consciousness.

Retinal examination showed arteriolar spasm, increased light streak, A.V. compression and slight edema and segmentation.

Fetal heart was heard throughout and there were no signs of the onset of labor. The cervix was tight and rather long.

On the fifth day patient's blood pressure level was noticed to be gradually increasing under treatment, but otherwise her general condition was slightly better than it had been. There had been no convulsions since the second hour after admission to the hospital.

The patient was sent to the operating room on this date, and a classical cesarean section was performed under paraldehyde sedation and one per

cent novocaine infiltration anesthesia. A living child weighing seven and one-half pounds was delivered. The patient returned to her room in fair condition. During the next five days her general condition showed marked improvement with a gradual dropping of the blood pressure level and lessening of her edema. The urinary output improved, and the albumin was less. At the end of this period function was returning in the paralyzed side. She received regularly daily hypertonic glucose and occasional small doses of morphine and barbiturate as sedatives. Fluid intake was kept in balance with the urinary output.

During the next week the patient improved markedly generally. Her hemiplegia had almost completely disappeared with only a slight residual weakness in the right lower extremity. On the fourteenth postoperative day, there was a slight elevation of temperature and some tenderness in the left femoral triangle. Some swelling was noted in the left thigh. The extremity was elevated on pillows, placed under a cradle and alternating heat and cold was applied through the medium of ice caps and hot water bottles. This thrombophlebitis promptly subsided. She was finally discharged on November 28, with blood pressure within normal limits, urinary albumin negative, and neither casts nor red cells in urine. She still had a slight residual weakness of the lower right extremity, but none in the right upper extremity. Signs of thrombophlebitis of the left lower extremity had completely disappeared. The operative wound healed satisfactorily, and her condition has been entirely satisfactory since.

DISCUSSION

Eclampsia is not a disease by itself, but only the symptom, the most outstanding one of several underlying diseases. Before the convulsions begin, we have a stage, more or less prolonged and full of symptoms and signs of most varied nature which seems to call our attention to what is impending. This stage is called the preeclamptic state. Bar has suggested the word "eclampsism" for this condition of preparedness for convulsions, and limited the term to true primary toxemias. Eclampsism may be defined as that unknown state of the organism in late pregnancy, produced by physicochemical changes in the blood and body tissues, or causing them, in which state the pregnant woman is liable to convulsions or coma.

About 10 to 12 per cent of patients develop one of the late toxemias of pregnancy, and about one per cent develop eclampsia. There seems to be a rather definite seasonal and geographic variation in the incidence of the disease. The late fall and early spring has the highest seasonal incidence, and the southern states with the warmer, moist climate, bring the highest geographic incidence.

Eclamptic mortality varies with the locality, type of medical service, and type of case, but in a cross-section of the country as a whole the figure is still about 18 to 20 per cent.

ETIOLOGY

The exact etiology of the condition is still unknown. However, there are several outstanding theories that have been presented by various workers in the field, the most important of which are the following:

1. Upset in tissue water balance, and the presence of NaCl retention.
2. Endocrine dysfunction with resulting hormonal imbalance, especially of the pituitary and thyroid glands.
3. Circulating toxins, the product of the embryo and placenta.
4. Focal infections, particularly previous urinary tract infection.

There is a prevailing belief that the field of biochemistry will finally disclose the cause of the pregnancy toxemia, although if and when it does it will inevitably be associated to some extent with all the work in other fields which has gone before.

On the basis of clinical observation there appears to be several predisposing causes in the development of the acute toxemias, and the frequency of their association seems to be more than a coincidence. They are: Primiparity in the very young and the old, multiple pregnancy, and hydramnios.

A detailed discussion of the various theories as to cause might prove very interesting, but we feel it would be somewhat out of place in a paper such as this where we are attempting

to present some of the more practical aspects of the condition.

The pathological findings are, as a general rule, few, and at times there is some difficulty in finding any at all. When present, the liver, kidneys, brain, and the peripheral vascular system are the sites of the most constant histopathologic changes. At the present time the lesions in the first three organs mentioned are conceded to be secondary, the peripheral vascular system receiving the primary shock and insult with its far-reaching consequences.

Briefly the following pathologic findings are commonly present:

1. General:
   Tissue changes,
   Angiospasm,
   Edema.
2. Liver:
   Focal necrosis,
   Thrombi,
   Lobular degeneration.
3. Kidney:
   Moderate hypertrophy,
   Nephrosis, or
   Acute glomerule nephritis.
4. Brain:
   Edema,
   Hemorrhagic lesions.
5. Blood:
   Frequently mild secondary anemia,
   Relative hypoglycemia preceding convulsions,
   Reduced CO^2 combining power,
   N.P.N. normal or slightly increased,
   Uric acid slightly increased.

SIGNS AND SYMPTOMS

When toxemia is developing there are invariably certain signs and symptoms which make their appearance first. They are: An abnormal weight gain, beginning usually after the first several weeks during which time there may be actual weight loss; an elevation in blood pressure, but not necessarily a high blood pressure; usually some degree of rather general edema; the urine may show small amounts of albumin and casts.

As the toxemia becomes progressively worse all of the above mentioned signs and symptoms are intensified. This may be a matter of hours, perhaps days, or even a few weeks. In addition other developments are noted as the patient approaches the convulsive stage as: Visual disturbance of varied nature, abdominal discomfort, nausea, epigastric distress, the apprehension of the patient increases, her mental processes become dulled. She may develop a very severe headache and vomiting at this stage. Shortly thereafter the patient usually has a convulsion followed by others at varying intervals, or she goes into coma without convulsions.

HYPERTENSION

The severity and course of toxemia should not be judged by one sign alone, but by the composite symptoms and signs presented. While hypertension is not always an index of the severity of the toxemia, it is generally conceded that the more rapid the rise in blood pressure, the more serious is the condition. Those who have a persistently high blood pressure usually have some chronic illness to which they are more or less adjusted, whereas a rapid rise, even to a lower level, may indicate a more serious impending condition.

In addition to the signs and symptoms mentioned above, there may be changes in the eyegrounds. These changes may vary from arteriolar spasm to marked retinitis. The eyeground examination in toxemia of pregnancy is extremely important, and should be faithfully carried out in all cases. It serves as an index to the present state of the peripheral vascular system, the progress of which can be followed from time to time. By these means we are in a much better position to judge the patient both as to treatment and ultimate prognosis.

Eclampsia ordinarily appears in the last twelve weeks of pregnancy, the greatest number of cases being in the last four of these. Its occurrence may be antepartum, intrapartum, or postpartum, the first of these being the most common. The establishment of labor pains may precipitate an impending eclampsia, or labor and delivery may be the

final strain necessary to produce convulsions in a preeclamptic in whom it was hoped that the ending of the pregnancy would avert this danger.

TREATMENT

There are still many and varied treatments being tried in the late toxemias of pregnancy and, unfortunately, many of these measures used are extremely pernicious. This varied therapy, of course, is the natural result of a condition with an unknown etiology. However, out of the travail of time, experience, and study there have evolved certain basic methods of procedure that seem to give us the lowest mortality and morbidity both maternal and fetal. These basic considerations are first, prevention; second, general medical and dietary measures; third, active measures. The second and third measures must be applied in both preeclampsia and eclampsia. Of course, the chief aim of therapy in the patient with toxemia is to prevent the progress of the condition from a state of preeclampsia into one of eclampsia.

PREVENTION

The cornerstone of prophylaxis is adequate prenatal care. Every pregnant woman should be considered a possible candidate for eclampsia, and all our efforts should be directed with this idea in mind. Since we do not know the cause of eclampsia, our treatment is all empiric. However, more can be accomplished by prevention than by treatment, because after the onset of convulsions our task becomes many times more difficult. The primary cause of eclampsia cannot be prevented, but by carefully observing the pregnant woman we are in a much better position to discover the early manifestations of toxemia, and by suitable measures either ward them off or interrupt the pregnancy before the disease reaches the convulsive stage. It is the pregnancy that favors the development of eclampsia. Briefly, a few of the most important considerations coming under the heading of prevention are:

1. A careful evaluation of the patient's history.

2. The state of the patient in regard to such proven important things as basal metabolic rate, especially a low rate, irregularity of weight gain in the early weeks of pregnancy, and especially loss of weight or retardation below normal.

3. The appearance of some of the early signs and symptoms.

4. When early toxemia manifests itself the patient should be observed frequently. She should be placed on a fairly high carbohydrate diet with a normal protein intake, and sodium chloride intake should be restricted; also other forms of sodium ingestion should be restricted. Bowel elimination should be adequate; mild sedatives should be employed, such as phenobarbital, and the patient should be encouraged to rest frequently.

The above measures have proven to be very satisfactory in the majority of patients in the prevention of the progress of the toxemia.

PREECLAMPSIA

In spite of the management as outlined under prevention, there may be a further progress of the toxemia to a more fulminating type of preeclampsia. With such evidences of increasing toxemia, the patient should be placed at bed rest immediately, preferably in a hospital. During this period frequent observation of the patient is absolutely necessary, especially in regard to blood pressure level, renal function, edema, and eyeground findings. A general outline for the treatment of patients with severe preeclampsia is as follows:

1. Absolute bed rest.

2. Sedation, barbiturates, small doses of morphine, paraldehyde, magnesium sulphate intravenously, or intramuscularly.

3. Hypertonic glucose intravenously, 20 to 25 per cent solution.

4. High carbohydrate diet with complete elimination of sodium chloride.

5. Fluid intake must be governed by the amount of edema present and the urinary output.

Patients with severe preeclampsia who do not improve on the treatment outlined over a

period of from twenty-four to thirty-six hours, or during this period show signs of further progress of the toxemia, will have to be treated more actively. The termination of pregnancy must be seriously considered, and the method employed must be selected that will best suit the individual case. The choice of method must be either induction of labor by medical or surgical means, or delivery by cesarean section. Surgical procedures should be under local anesthesia as far as possible.

It is imperative that the treatment employed be carried out promptly, and at the right time, for two chief reasons: First, to prevent the onset of convulsions; and, second, unnecessary delay frequently causes permanent damage to the peripheral vascular system and kidneys.

ECLAMPSIA

This is the state of active convulsions and coma, one of the most dreaded and dangerous of complications.

The conservative method of treatment has at the present time gained precedence over the older radical method. The axiom that is generally followed now is "to treat the disease first, and terminate the pregnancy later." These conservative measures consist chiefly in employing the modified Stroganov plan of treatment, i.e., rather marked sedation, hypertonic glucose solution and magnesium sulphate solution frequently intravenously, administration of oxygen when cyanosis is present, fluid intake determined by urinary output, venesection only in cases of acute cardiac decompensation, and the general measures always necessary in the handling of an unconscious patient. All outside stimulation in the surroundings of the patient must be kept at a minimum.

The general trend in this country at present, largely the result of the Stroganov influence, is to treat eclampsia conservatively by narcotization and by supportive measures until it is apparent that this will not relieve the patient, or else until there is sufficient improvement to permit termination of the pregnancy without undue risk to the mother.

When the time for induction of labor arrives, as a general rule and especially in the primigravida, it should be therapeutic rather than instrumental in order to be done in the most conservative possible way. We must remember that it may be advisable to resort to cesarean section, and in such an event vaginal manipulations increase the risk of infection. The choice of the method of delivery again depends entirely upon the individual case and the conditions surrounding it. There is no doubt that there are many times when a cesarean section, done in a suitable environment and in a correct manner, is the conservative method, and any other attempted procedure through the birth canal is radical.

In any operative procedure carried out at this time, always the anesthetic of choice is local infiltration or nerve block.

The radical method of treatment, by which we mean the interference with the pregnancy during the acute convulsive stage of the toxemia, has been almost generally abandoned. The reason for this can be seen in the mortality figures for patients treated in this way.

We are forced to remember that from time to time patients do have the onset or recurrence of the acute convulsive stage following delivery. Therefore, it is most important that all toxemic patients be observed carefully postpartum, and treated accordingly.

SUMMARY AND CONCLUSIONS

1. Three case reports of late acute toxemia of pregnancy were presented.

2. The subject is an important one not only for the obstetrician, but for the entire medical field because of the far-reaching influence of the condition.

3. The incidence of the late toxemias is high, but is subject to seasonal and geographic variation. The mortality and morbidity rates, especially maternal, are extremely high, and serve as a definite challenge to the profession.

4. The exact etiology is still unknown, but on the basis of work done in this direction the field of biochemistry will probably supply the answer.

5. The peripheral vascular system bears the full force of the insult of the condition with secondary effects in all of the other body systems. In many cases that are handled correctly the effects of the toxemia appear to be transitory, but in many others, especially the neglected group, permanent damage is done particularly to the peripheral vascular system.

6. The early and late signs and symptoms are listed, and the diagnosis is made on the appearance of these signs and symptoms. No one or two signs must be taken as a yardstick, but the composite picture must be evaluated. The importance of the eyeground examination is particularly stressed.

The fundamentals of treatment are based on: (1) Prevention through careful prenatal care, (2) general medical and dietary rules after the toxemia has manifested itself, and (3) active measures aimed toward the termination of the pregnancy when the other measures are failing.

8. All active surgical measures during the acute convulsive stage of the toxemia are generally contraindicated. The application of this rule has lowered the mortality rate.

9. The successful handling of the late toxemias of pregnancy calls for the best of medical skill and perseverence.

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Rupture of Spleen

An instance of a ruptured spleen incurred while playing football is reported in *The Journal of the American Medical Association* for March 15 by L. Wallace Frank, M.D., Louisville, Ky., who says that so far as he has been able to ascertain only one other case of such a football injury has been reported in medical literature.

The rupture occurred when the patient, a youth aged 17, was struck in the upper left portion of the abdomen while playing football. "He was completely knocked out," Dr. Frank reports, "his color was pale and his pulse was thready; he was carried from the field. On the following day he made the trip home with the team, a distance of 250 miles. He had no complaints but lacked his usual energy. During the next day, Sunday, he remained quietly at home, and the family noticed that he had lost his appetite. On Monday he returned to school as usual and that afternoon reported for football practice. He went through the routine signal drill, being apparently perfectly well. The following afternoon while in scrimmage he was again struck in the abdomen and suffered agonizing pain on the left side and pain in the left shoulder."

At this time, four days after the original injury, he was sent to the hospital. Definite signs of internal hemorrhage appeared and the following day he was operated on and his spleen was removed. He made an uneventful recovery and left the hospital on the fourteenth day after the operation.

Examination of the spleen revealed that it had been torn completely through. Discussing the length of time between the original injury and the signs of hemorrhage Dr. Frank says: "At the time he was first hurt the spleen was torn, but the blood coagulated and sealed off the bleeding surfaces. (Examination of the removed spleen showed an old organized blood clot covering the splenic pulp.) . . . Following his second traumatism (injury) I think that the tear in the spleen was reopened and at this time the pedicle (stem of the spleen) was torn."

THE VIRUSES*

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In his book entitled "The Virus; Life's Enemy", K. M. Smith says: "Bacteriology has been called the 'world of the infinitely small', the viruses, 'the world of the infinitely smaller.' The word virus seems originally to have meant a poison, and was so used in the quotation: 'Cleopatra pouring the virus of an asp into the wound in her arm.' "

Diseases were at one time considered to be caused by such poisons. Then came the knowledge of bacteria, toxins, spirochetes and protozoa as disease producing agents. Gradually there developed the fact that many transmissible diseases of animals and plants were the result of some different type of infectious agent.

Since most of these substances were capable of passing through earthenware filters impervious to ordinary bacteria, the term filterable poisons or viruses came into use. It now signifies some agent similar to a bacterium or spirochete, differing perhaps only in the size of the organism.

Hence we have learned of the existence of infectious agents endowed with a nature partially or wholly different from that of ordinary bacteria, and that such agents may be recognizable without the aid of vision and stock laboratory media.

The realization that many of man's most deadly and disabling diseases are the result of infection by such viruses, has stimulated the ablest scientific minds to the investigation of their nature. The task has proved to be one of the most intriguing and difficult labors ever undertaken. As we are all aware, its completion is still only too far distant in the future. The story of the progress of the work and some of its problems is most interesting, a study of matter midway between the animate and inanimate world.

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DISCOVERY OF THE VIRUS

About 1877 Chamberland devised a filtering apparatus of candle shape made of unglazed porcelain. In 1891 Nordtmeyer introduced a new filter medium made of compressed infusorial earth known as kieselguhr, obtained from a mine in Hannover, Germany. This filter was called the Berkefeld, from the name of the owner of the mine. Such filters are capable of holding back the smallest micro-organism capable of being seen with the highest power of the microscope. The fluids which pass through such filters are sterile.

In 1892, Ivanovski, a Russian botanist, was investigating a disease of the tobacco plant known as tobacco mosaic, so called because the leaves of diseased plants are mottled in a light and green pattern. He extracted some of the sap from a diseased plant, and passed it through a fine filter candle. He found that the filtrate, though sparkling clear and free from all bacteria, yet had the power to produce the mosaic disease when rubbed on the leaves of a healthy tobacco plant. This was the first scientific demonstration of the existence of a virus disease. He did not realize the importance of his discovery and considered bacteria responsible in spite of his own experiment. Little attention was paid to the report of his work. In 1898 two experimenters working with foot-and-mouth disease showed that the agent producing this dis-

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order is capable of passing through a bacteria-proof filter. As is often true in scientific work progress was very slow, and it has only been in the last two decades that the true importance of viruses has been recognized, though the diseases produced by them have been known for centuries.

Zinsser found evidence that smallpox existed in China as early as 1700 B. C. Yellow fever has been known since early in the seventeenth century and is thought to have been confined to the western hemisphere until the voyages of Columbus. The earliest known reference to a plant virus was published in 1576, and concerned a tulip disease known as "tulip break."

It is now known that plants of all kinds suffer from a great variety of virus diseases, and no fewer than 135 separate plant viruses are now known.

The list of human diseases for which viruses are responsible is truly an imposing one. In addition to smallpox and yellow fever, the list includes varioloid, chickenpox, herpes simplex, herpes zoster, five different types of encephalitis, poliomyelitis, mumps, measles, epidemic influenza, common colds, and also such diseases as rabies, dog distemper, swine cholera and influenza, psittacosis, foot-and-mouth disease of cattle, dengue fever, equine encephalomyelitis, louping ill of sheep, and many other diseases of animals, plants and birds.

STUDY OF THE VIRUS

The study of the virus includes several ingenious methods of measuring the size of this ultramicroscopic organism. First we may mention the use of special types of filter with pores of known diameter. The size of the virus particle can be calculated from the diameter of the filter pore which just fails to let the virus pass. For this purpose clay filters are not suitable, as their porosity is made up of holes of different sizes, and the fine channels are not straight tubes. For virus studies, the filter tubes must be straight and uniform in size, and such filters are made of collodion, and are known as Gradocol membranes. These are measured or standardized as to the size of the pores. A series of these membranes with graduated order of pore size are prepared. The virus containing fluid is filtered under pressure through a number of different pores until a filtrate is obtained containing no virus. The particle size of the virus is then calculated from the known pore size of that membrane. Such studies indicate the smallest virus to be that causing foot-and-mouth disease, about 10 millimicrons in diameter, and the largest the psittacosis virus, with a diameter of 275 millimicrons, (a millimicron being one millionth of a millimeter). Many plant viruses have been found to be rod-shaped instead of spherical, thus introducing more difficulties into attempts at measurement. A second method has involved the use of the ultramicroscope, and some viruses have been photographed with monochromatic or single wave length light of the ultraviolet spectrum, then measured with microscopes fitted with quartz lenses. A third method consists of spinning the virus fluids in an ultracentrifuge at a very high speed. The size and molecular weight of the particles are calculated from the rate at which they pack down at the bottom of the tube. A fourth method of measurement is being developed which involves the use of x-ray photography.

MEASUREMENT OF CONCENTRATION OF VIRUS

During the study of viruses it is necessary to make tests of the virus content of various samples. A good example is found in the work with plant viruses. It is obvious that the quickest way and some times the only way to find out if there is virus in a given sample is to inoculate a susceptible plant. This procedure will give a positive or negative answer, but will not give a quantitative result. The concentration is measured by means of a peculiar type of reaction on the part of particular plants to virus inoculation. In the case of the tobacco mosaic virus another species of plant closely related to the tobacco plant is used. When the solution containing the virus is rubbed lightly over the surface

of the leaf with a finger or spatula dipped in the virus, the plant will react to the inoculation in three or four days. Instead of producing the typical mosaic mottling so characteristic of mosaic disease in the true tobacco plant, numerous small circular spots develop on the inoculated leaves. These spots are known as local lesions, and there is no further spread of the disease. When the virus suspension is diluted so that the number of lesions is small, it is thought that one lesion represents the point of entrance of one infectious virus unit. Hence by counting the number of lesions produced, one can arrive at an estimate of the virus concentration. This method is somewhat analogous to Koch's method of plating bacteria.

GROWING VIRUSES IN TISSUES

In using animal tissues for the cultivation of viruses, the worker must be on his guard against the possibility of introducing another virus into his cultures in the actual tissue he is using. This is quite likely to happen when tissues or serum from adult animals are used. Li and Rivers overcame this difficulty by minced chick embryo suspended in a special nutrient medium and contained in a special type of flask. The following is their method of cultivating the vaccinia virus, obtained from calves inoculated with the smallpox virus. The special tissue was obtained by incubating hen's eggs for nine to twelve days, which were then opened under aseptic conditions. The nutrient medium, sterilized by filtration was placed in a special type of flask, and about one gram of the sterile chick embryo tissue placed in the solution. Next about 0.1 to 0.2 c.c. of virus emulsion is added to the flask, and the whole incubated at 37 degrees C. for seven days. The culture is then tested by taking small quantities of it at intervals, diluting it very highly, and testing the dilutions on rabbits. This is done by shaving a patch of skin on the animal, and inoculating each diluted sample. The presence of the virus is indicated by the development of a lesion on the skin. The growth or multiplication of the virus is shown by the high dilution to which the cultured sample can be taken, and still produce lesions on the rabbit's skin. Many other animal viruses can be cultivated in the same manner, and for the majority chick embryo has proved the most useful. The yellow fever virus has been inoculated directly into the embryo by means of a fine needle and a special type of syringe. Some workers even bring the infected membrane into contact with the under surface of a cover slip which covers the opening in the egg, thus not disturbing the normal relations of the membrane to the embryo, and direct observation can be carried out by special types of illumination.

DESTRUCTION OF VIRUSES

Just as bacteria may be destroyed by certain physical and chemical agents such as heat and antiseptics, such agents act in a similar way on viruses. All viruses can be destroyed by heat with a wide variation in the degree necessary in different viruses. Some are easily destroyed by alcohol, others are very resistant. Dessication destroys some, but not all. That of tobacco mosaic will remain infectious for years in dried leaves, and can be found in infective form in cigars and cigarettes. The yellow fever virus when dried and frozen remains active for many months. Irradiation with ultraviolet light will destroy both plant and animal viruses, though they are much more resistant to this agent than are bacteria.

The study of the agents capable of destroying viruses brings out many interesting facts. This study requires the presence of the virus in a pure state. When viruses are extracted from plant or animal hosts, they are accompanied by a number of other substances which may profoundly effect their behavior. Vinson and Petrie, two American investigators, showed that a virus could be precipitated or thrown down from a solution by such well known protein precipitants as ammonium chloride. This simple experiment presented the virus in a new rôle, as behaving like a chemical substance rather than as an organism. Other experiments have proved its pro-

tein-like nature, though in many of its properties it unquestionably behaves as a living organism. Some have been crystallized in true three dimensional form. Others are true protein but non-crystalline.

WHAT IS A VIRUS?

Is the virus a living or inanimate substance? When extracted from its host it is found to be a protein of high molecular weight. Yet one unit of this substance when introduced into a susceptible host will produce millions of units of the same substance. Hence the virus grows, though only in the living cells of its specific host. Several interesting theories have been suggested to explain these facts. One supposes the virus to be a microorganism, comparable to a bacterium of extremely small size, another that it is a chemical possessed of unusual properties, which may be the product of the disordered cell itself.

The first theory requires viruses to be highly specialized parasites, capable of growing only in certain hosts, and often only in particular types of cells in specific hosts.

The second theory, that viruses are a chemical but "non-living" substance, can be supported by striking evidence, at least in the case of many types of virus. But if viruses are true chemicals, how can one explain their power to multiply, a property so characteristic of living organisms. Finley has suggested that they are enzymes, similar in nature to proteinases. Such enzymes have the power not only to break down protein molecules within the cell, but also that of building up complex protein molecules by synthesis, hydrolysis, and replacement. Such a virus in a suitable host organism might cause production of protein by their power to synthesize replicas of their own structural pattern and in this manner "grow" as do living organisms. It is further conceivable, that an autocatylytic protein might behave in a manner similar to that of a saturated solution of some chemical salt when a single crystal of the same salt is suspended in the solution. A living cell probably contains a large number of compounds, such as salts, amino acids, carbohydrates, polypeptides, and other complex protein materials. From such a wealth of material, a virus protein might be able to cause the necessary compound to form in a pattern identical with that of its own structure. Of course this could only happen when the cells of the host contained all the necessary compounds or building material. If some of these essential building blocks were absent, then the virus would be unable to multiply, and here we have an explanation of the extreme specificity of certain viruses for particular hosts, and even for specific types of cells in these particular hosts.

HOW VIRUSES SPREAD

It is probably true that in every case of virus disease, the infectious agent is capable of being transferred by some means from the diseased host to a healthy susceptible host. There are several methods by which viruses are known to be spread, and some are transmitted by more than one method.

Contact would seem to be the simplest and easiest form of transmission, and in some cases it is only necessary for the diseased host to come into contact with a healthy susceptible host for the virus to be transferred. But can this substance pass through the unbroken skin or epidermis of the host? It has been shown that all viruses in the contact group can be spread by infection beneath the skin, but this it not a natural method, except in a few cases. Rabies offers a good example of the natural injection method, as does the transfer of yellow fever by the mosquito bite. Experiments show that plant viruses do require a wound, though a very minute one, such as the breaking of a leaf or root hair, for a portal of entry. Pigeons supplied only with virus contaminated drinking water, show no infection for as long as one month, unless some sharp grit is fed the birds at the same time.

There is a virus disease known as tobacco necrosis, in which the disease is confined to the roots of the plants. This virus is in the soil and is washed down along the roots of the plants, where the root hairs are ruptured

by growing against sharp particles in the soil, and infection results. If these plants are suspended and grown in a liquid medium which contains the virus, then no infection occurs. Thus it would seem that in most instances at least the infection by contact is not through the unbroken skin.

INFECTION BY AIR

Viruses transmitted by this method must be able to retain their infective power while floating in the air, as well as resistance to dessication and oxidation. The virus of epidemic influenza has been found to retain its infective property for about one hour while floating in the air in droplets of moisture. Dog distemper is another virus disease which is air borne. If a ferret is placed in a cage in a room containing a dog suffering with distemper, and all suitable precautions observed to prevent carrying by any other method, in ten days the ferret will invariably develop the disease.

INFECTION BY INSECTS

Just as malaria is not carried by every type of mosquito, so it usually requires a particular insect or type of insect to transmit a virus disease. Such insects are known as vectors, and in the case of plant viruses extract the sap of plants by means of a long sucking beak, feeding in much the same way as does the mosquito. Yellow fever, dengue fever, equine encephalomyelitis, and louping ill, are all examples of infection by blood-sucking mosquitoes or ticks.

As we mentioned before the mosquito is the carrier of the virus responsible for equine encephalomyelitis. Not long ago two American workers in southeastern Massachusetts noticed that large numbers of pigeons were dying off in some kind of an epidemic. However, as soon as cold weather began to set in, the death of the pigeons began to cease. Just about the time of the pigeon epidemic there was in the same area also an epidemic of equine encephalomyelitis together with a number of cases of human encephalitis. Inoculation tests to mice from one of the dead pigeons was made, and the virus identified as that of equine encephalomyelitis. The virus must have been transmitted to the pigeons from mosquitoes. During cold weather the activity of the mosquitoes ceased, and with it the pigeon epidemic. So it seems that in addition to man being infected with influenza from ferrets, and with psittacosis from parrots, he may also be threatened with encephalitis from pigeons.

While transmission by contact, air and insects explains the spread of certain virus diseases, only too many still remain unexplained. An interesting possibility that has been suggested in these cases is that the virus may be present in the host in a latent state, and then is aroused into activity by some specific stimulus or particular set of conditions. Circumstantial evidence for this hypothesis can be found in the virus disease known as herpes labialis. This can not be shown to be spread from person to person, but has a very definite connection with other diseases and conditions which appear to stimulate it into activity.

THE VIRUS AND THE LIVING CELL

One of the most interesting points in the study of the viruses is the relationship between them and the cells which they infect. One outstanding characteristic is the fact that they can not be cultivated in artificial cell-free media, such as are used in the cultivation of bacteria. It is possible to grow viruses in small bits of living tissue which are growing in a sterile nutrient medium. The effect of the virus on the living cell of the host may be either a stimulation, in which case the cells multiply abnormally and produce tumors, or the virus may cause actual destruction and necrosis of the cell. Occasionally a virus may be "educated" to infect a new host. It is not possible for example to transmit the virus of influenza directly from man to mouse, but the virus can be induced to infect mice if it is first passed through a ferret. Sometimes several ferrets must be used before the virus becomes virulent for mice.

VARIATIONS IN VIRUSES

Many of the viruses affecting animals and plants give rise to variants which, while re-

taining some of the properties of the type virus, yet possess marked characteristics of their own. Finlay has classified the forms of variation into four groups thus:

1. Variation in virulence.
2. Variation in the type of lesion produced in the host.
3. Variation in antigenic character.
4. Variation in both type of lesion and antigenic character.

Variation in virulence is illustrated by an increase or adaptation to new hosts, as when influenza virus becomes suitable for the infection of mice. Also by a decrease in its effect, as by the mildness of the disease produced by vaccinia as compared with that of true smallpox.

Variation in the type of lesion is illustrated by the so-called pantropic and neurotropic strains of yellow fever virus, which produce distinctly different types of lesions.

Variation in antigenic character is shown in several strains of virus of foot-and-mouth disease, which produce identical lesions, but afford no immunity one against the other. Various strains of influenza virus exhibit the same type of variation.

The fourth group, when difference in symptoms is associated with antigenic differences, practically amounts to the origin of a new virus.

PREVENTION AND CONTROL OF VIRUS DISEASES

Years ago Jenner and Pasteur showed how to secure immunity against two of the most deadly virus diseases. The protection of the human race against many of these diseases however remains a problem for the future still to solve. While some of these diseases will confer a lifelong immunity after one attack, many others such as herpes simplex, the common cold and influenza produce only a transient immunity. The problem is further complicated by the existence of several strains of some viruses which do not immunize against each other. The problem of prevention and control lies in the development of antibodies which have the power of neutralizing the specific virus or antigen. When Jenner vaccinated against smallpox, he used the virus of cowpox, a mild or attenuated strain of smallpox, which produced only a mild local disease, and yet was able to produce sufficient antibodies to protect against the much more virulent smallpox virus. In much the same fashion Pasteur used a weakened strain of rabies which he obtained from the dried spinal cords of infected rabbits.

INOCULATION WITH VIRUSES

It is also possible to produce immunity in some instances by the inoculation with viruses which have been inactivated or killed by various agents, but which still retain their power to stimulate production or antibodies without producing disease in the host. You will all recall the attempt a few years ago to protect children against epidemic poliomyelitis by the injection of a virus treated with formaldehyde. Some diseases have been controlled by inoculating at the same time, a weakened strain of the virus, and an antiserum from an animal which has recovered from the disease. Such a method is now in use in the treatment of distemper in dogs.

Attempts have been made to protect against epidemic influenza by means of an antiviral serum obtained from horses which have been inoculated with material obtained from ferrets infected with strains of human influenza. So far this attempt seems to have been nullified by the existence of multiple strains of the influenza virus. There is still a hope that cultivated influenza virus may prove to be effective for vaccine purposes. Swine have recently been immunized against swine influenza by injection of active virus intramuscularly or subcutaneously, and without causing the disease.

The virus of yellow fever, when grown in culture of chick embryo from which the nervous tissue has been removed, loses its affinity for the cells of nervous tissue, and is greatly reduced in virulence. This attenuated culture virus is now being used for immunization against this disease.

Naturally since the immense publicity that

has accompanied the development of sulfanilamide and its numerous derivatives, attention has been directed anew to the development of some new compounds which would make the chemotherapy of virus diseases a possibility. The discovery of such a substance may be possible in the not too distant future.

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SOIL IN RELATION TO HEALTH*

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THE subject of health seems to have caught the public mind and bids fair at last to take its proper place in our daily life. During the World War No. 1 the slogan was "food will win the war." Now in the face of a world cataclysm any slogan which may be adopted seems more likely to be along the line of substituting "health" for "food." After all the two sayings express only slight changes in emphasis—food and health while not synonymous are interdependent words in the world of living things.

I shall attempt in the short time allotted me to point out some of the pertinent facts underlying the relationships between food and health in mankind. Similar relations exist between food and all living things but I take it that this convention is restricted more particularly to discussions and facts related to man and his health.

There will not be time to discuss the problems of soil pollution and other disturbances which affect directly or indirectly the health of man. This short paper will be limited to the normal conditions of the soil which are of paramount importance in human nutrition.

Until comparatively recent years there was slight discrimination from the health standpoint between cuts of tenderloin steak from similar beef animals; likewise, potatoes were potatoes; beans were beans and lettuce was lettuce, except for the quality of texture. During the past quarter century we have gradually been discovering more and more differences in the quality of foods of the same kind. These qualities were first expressed in the differences in mineral content and later in organic compounds as for instance, sugars, fats, proteins, etc. Later we found another large group of substances which for the time being overshadowed the organic and inorganic constituents of foods. These were the vitamins which because they were discovered largely through feeding experiments, came to have unusual precedence in the educational programs of nutrition experts. While there is undoubtedly much yet to be learned regarding vitamins, old, new or undiscovered, and their rôle in health, we have now come to the conclusion that they are only a part of the nutritional problem and are no more important from a practical viewpoint than are the minerals and organic substances with which they are associated.

A few years ago it was generally accepted that only six mineral elements were essential to plant life. These were iron, calcium, potassium, magnesium, phosphorus and sulphur. Animals were also generally conceded to require in addition to the above, the two elements—sodium and chlorine—which are

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the components of common salt. For many years it was believed that these eight elements supplied man's body with all the minerals essential to normal growth and health.

During recent years it has been found that the "trace elements"—manganese, zinc, cobalt, copper, boron, iodine and fluorine—also are essential constituents of the animal body and in all probability there will be several more added. All of these so-called trace elements appear to be present only in minute quantities and frequently only in localized organs where they seem to be essential to the processes of normal development.

MINERAL ELEMENTS

But you are probably thinking what does all this have to do with my subject of "Soil in Relation to Health?" It is to the rocky surface of the earth that all living things owe the origin of the mineral elements essential to their growth, normal development and health. Few of these elements can be utilized directly by animals. Plants are the essential intermediary wherefrom animals obtain these elements. It is a complicated process from the mineral elements of the rocks through their utilization in soluble form by plants to their final incorporation in the tissues of man through the digestive system. Nature worked this out in a fashion beyond the present knowledge of man and obtained a perfect balance through ecological factors influencing the distribution of plants and animals. Only through man's ascendency has this balance been disturbed which brings us to the problems before us today. If man would only give up his conceited belief that he could improve on Mother Nature's master plan we would not be worrying about this problem of health. The problem would be non-existent. But then you say who wants to live in a world where there are no problems to work out? As a scientist I would have to admit that it would be a dull place in which to live.

To come back to my subject, it resolves itself into a balanced diet of the essentials for normal health. In all probability we have far to go before we know what all these essentials are, yet we know enough to enable us to say that there is a direct relationship between the soil and health as has been observed for many years. Physicians have recognized for a long time that there was a direct relation between the incidence of goiter and the lack of iodine in the water supplies of certain regions where the rocks are of sedimentary origin. A former geologist of this state has been quoted as author of the statement that "the university never matriculated a student who lived on the Pottsville sandstone." This is probably not correct today but certainly there is ample evidence that the poor soil derived directly from the Pottsville sandstone does not produce ambitious individuals. And we do not know why! These examples might be amplified with respect to the minerals essential to man's health. The problems of calcium deficiency are well recognized in certain areas where this element, so abundant in some regions, is totally absent in others. Iron, sulphur, magnesium and phosphorus deficiencies are also well recognized and need no special elaboration.

QUALITY OF SOIL

How may the situation be corrected? Since plants are the intermediate products which assimilate most of these elements and prepare them in forms available for animal assimilation we must look to them and their composition from every angle, including the trace or minor elements as well as vitamins. We must recognize that the composition of food plants is dependent upon the elements present in the soil in which such plants were grown. We must recognize therefore, that a bushel of potatoes grown on a mineral deficient soil is not the nutritional equivalent of a bushel of potatoes grown on a soil containing the necessary elements. Quality rather than quantity therefore becomes the criterion for determining the relationship between food and health.

What soils possess the elements necessary to produce food plants containing these mineral qualities essential to man's health? We cannot answer this question with confidence

at present. We can say from observation that those people living on our more productive soils have in general the better health index. We do not have today a sufficiently complete analysis of our soils to say which ones will produce the most complete requirements from the standpoint of human food production.

LABORATORY ESTABLISHED

This problem of the relation of soil to health has become so important that the office of experiment stations in collaboration with the State Agricultural Experiment Stations has established a new regional laboratory in connection with the Cornell Agricultural Experiment Station for the study of this very subject. They will cooperate with the state experiment stations in growing plants in soils of known composition; in analyzing the plants thus grown to determine their composition; in feeding these plants to experimental animals to determine their effect upon animal growth, development and health; in carrying these studies to animals used for human food for the same purpose, and finally to feed humans on these experimentally developed plants and animals of known composition. This is perhaps the most far-reaching research study ever attempted in the field of biology. Much good should come from it and I am sure the medical profession and especially the health associations will be watching closely the results coming from this "soil and nutrition laboratory."

In conclusion I may say that we are gradually pushing back the curtain which has obscured events behind the common scene and as these new scenes unfold we shall recognize a little more clearly each time the importance of fundamental facts. In this health program we shall, as time goes on, recognize more fully the fundamental relation of health to the soil. And through this recognition mankind will be benefited for the reason that he will be brought closer to nature and these things which are most worthwhile in our lives.

CONSERVATIVE TREATMENT OF SMALL URETHRAL FISTULAE*

(Report of Two Cases)

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THE mere fact that there have been innumerable procedures used to close urethral fistulæ is evidence that none have been entirely satisfactory. Cauterization with caustic or high frequency currents; simple excision with closure of the floor and outer layers separately; denudation with suture, aided by relaxing incisions; the use of glided flaps, etc., are only a few of the many operations described.

In 1937, Visher reported two cases of urethroprostatic fistulæ which he treated in a more conservative manner with excellent results.[1] Although this method is probably used in many cases, there is very little in the recent textbooks of urology dealing with this type of treatment. Reported below are two cases of urethral fistulæ, one urethropenile and the other urethroperineal, which were treated conservatively with good results.

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CASE REPORTS

A 46-year-old white male was admitted to The Laird Memorial Hospital, stating that on voiding

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there was an escape of urine from a fistula posterior to the scrotum. This was accompanied by dysuria, frequency, and nocturia. The symptoms developed following the spontaneous rupture of an abscess one year prior to admission. He denied venereal infection. Eight years before this illness he had had a suprapubic cystostomy performed because of urinary retention. During the past year frequent soundings had been performed and several operative attempts to close the fistula had been unsuccessful.

Physical examination revealed a small opening just posterior to the base of the scrotum. The prostate was slightly tender, but not enlarged. When the patient voided, the greater portion of the urine escaped through the fistula.

Laboratory studies were negative except for the presence of numerous pus cells in the urine. Intravenous pyelograms were interpreted as normal. Because of the presence of numerous false passages within the urethra, sounding was unsuccessful.

Under ether anesthesia the bladder was opened through a suprapubic incision and the wall revealed many heavy trabeculations. There was a stricture in the posterior urethra. A sound was passed from above through the prostatic and pendulous urethra after which a number 20 French, soft rubber catheter was inserted. The suprapubic incision was closed and the Space of Retzius drained.

On the eighth postoperative day, the fistula had healed and on the twelfth day the catheter was removed. The patient voided without difficulty. He returned to the clinic at frequent intervals for sounding and on the last admission a number 20 French sound was passed with ease. This procedure was carried out three years ago and the patient has remained symptom free.

The second case was that of a 40-year-old colored male with edema of the genitalia, fever and chills of two days duration. Although the edema was progressive, the patient was still able to void without great difficulty. Fifteen years prior to this admission, he had a Neisserian infection.

Physical examination revealed a temperature of 102.4 degrees F. There was marked edema of the penis, scrotum and perineum. Examination of the prostate revealed nothing abnormal.

Laboratory studies showed a few pus cells in the urine, a positive Kahn, and a white blood count of 26,000. Under general anesthesia multiple incisions were made along the shaft of the penis, into the scrotum and also into the tissue posterior to the scrotum lateral to the midline. A large amount of pyoid material was obtained from the latter incisions. On the ninth postoperative day, urine escaped from a small fistula at the base of the penis. He was kept under observation in the out-patient department for one month, but the fistula failed to heal.

He was readmitted to the hospital and a number 20 French, soft rubber catheter was inserted in the urethra and bladder after dilatation of a stricture above and below the fistula. The indwelling catheter was accidently removed on the fifth day, but the fistula had completely healed and the patient voided without difficulty. When last examined, he was symptom free.

SUMMARY

A conservative method of treatment of small urethral fistulæ is presented, based upon the introduction of an indwelling urethral catheter.

Of the two cases reported, one was of rather long duration, the other of short duration. Healing of the fistulæ occurred in eight and four days, respectively.

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Case of Rare Infection

An instance of an apparently rare blood stream infection similar to typhoid due to the organism, Salmonella suipestifer, is reported by A. E. Hardison, M.D., and A. B. Shipley, M.D., Nashville, Tenn., in *The Journal of the American Medical Association* for March 1.

The illness of the patient, a cotton mill superintendent, lasted for twenty-seven days, during which there were fever and chills followed by vomiting and profuse sweating. Death occurred from respiratory failure. Blood studies suggest that Salmonella suipestifer was the causative and not a secondary invading organism, the report says.

A study of possible avenues of infection gave no clue, but the authors say: "The possibility of a rodent-borne infection cannot be dismissed. This condition is rare, judging from reports in the literature. It may be that if thorough laboratory work was done in all cases of prolonged fever and of gastroenteritis (stomach and intestinal inflammations), the distribution of Salmonella suipestifer in man would be found more widespread."

THE CHILD IN THE PUBLIC HEALTH PROGRAM*

By JOHN M. SAUNDERS, M. D.
Washington, D. C.

THE objectives of a child health program are: (1) The intelligent preparation of every mother for childbearing; (2) adequate prenatal care to insure a living, healthy baby, and (3) continuous medical supervision from birth to maturity. The objectives of the child health movement have gradually come to be regarded as far more fundamental and inclusive than sporadic attempts to reduce the infant mortality rate or to correct certain diseases and defects in children. A comprehensive child health program aims to protect, promote, and conserve the health of children from the prenatal period through adolescence, and it is an integral part of an organized public health program.

The infant welfare movement was partly the outcome of economic necessity arising from declining birth rates in Europe during the eighteenth century, together with the development of a social conscience as related to children. Little progress was made until the movement was implemented by the rapid development of scientific medicine late in the nineteenth century and early in the twentieth century. The scientific study of the child began during this period and led to the development of pediatrics as a special field of medicine. Pediatrics and the new science of nutrition are largely responsible for the modern concepts in child health work.

Though the infant mortality rate has been reduced in recent years, it cannot be said that this problem has been solved. Expert medical, nursing, prenatal and delivery care, and care of the newborn as carried out in certain areas have proved their value in reducing neonatal as well as maternal death rates. The incorporation of prenatal care in the public health program is rapidly spreading, and methods for providing expert medical and nursing care for mothers at delivery and for the newborn infant present a problem which is receiving a great deal of attention at present. In this state nursing assistance at delivery is a part of the general public health program of one county. Methods are being learned for applying the contributions of modern obstetrics to the needs of the community.

The prevention of premature births is a problem requiring further study, but a wider application of the knowledge already gained regarding the care of the premature infant will reduce the number of deaths due to this cause. In general, the programs developed to deal with the problem consist of three parts: An educational program, the provision of services, and the provision of equipment in the form of incubators. In West Virginia the State Health Department has provided 46 premature beds for rural counties for the use of private physicians in the care of premature infants. Recently an excellent article on "The Care of Premature Infants" was published by Dr. Thomas W. Nale in THE WEST VIRGINIA MEDICAL JOURNAL.[1] This type of educational material is basic for a program for the prevention of deaths among premature infants. There is a need to continue and to expand general educational programs in order to enlist the interest of the public in providing better facilities for premature infants.

THE AUTHOR

Dr. Saunders, Vanderbilt University School of Medicine, 1930; American Board of Pediatrics; Children's Bureau, United States Department of Labor.

*Read before the West Virginia Public Health Association, Morgantown, West Virginia, October 31, 1940.

Improved sanitation, scientific feeding, and immunization procedures have proved their worth in reducing the number of deaths of infants over one month of age. However, their application is still not wide enough. Diarrhea, enteritis and respiratory infections still remain serious problems for this age group. In West Virginia in 1938 the death rate from diarrhea and enteritis in children under two years of age was 24 per 100,000 population, more than twice the rate for the United States. During this same year there were 134 whooping cough deaths in the state, and of this number 79, or 59 per cent, were among children under one year of age. In 1938, 367 deaths from pneumonia among infants under one year of age were reported in West Virginia. This number represents 27 per cent of all the reported pneumonia deaths in the state. Of all the deaths occurring in West Virginia in 1938, 19 per cent were among children under five years of age.[2]

CHILD'S LIFE HAZARDOUS

Though a child's chances of surviving until maturity are greatly increased after the first year, his course is filled with hazards. For too long we have been concerned only with saving babies' lives and discovering that they have defects when they reach school age. The idea that a baby that is born normal can be kept normal throughout infancy and childhood has been rapidly gaining ground since the advent of preventive pediatrics. When properly developed, infant and preschool health supervision will pay big dividends in terms of physical and mental health for the children of this nation, not only in terms of handicaps and defects prevented but in terms of positive gains made. One of the recommendations made by the White House Conference on Children in a Democracy was "the supervision of health and development of infant and child at stated intervals throughout the period of growth, and care by qualified physician and public health nurse when needed, at home, in child health conferences, in schools, and in physicians' offices, including preventive dentistry by qualified dentists for children of preschool and school age and social services as needed.

Child health conferences have become an important phase of a public health program. These conferences serve as a means not only of educating physicians and the general public in the care of infants and preschool children, but also of rendering service to infants and preschool children.

HEALTH CONFERENCES

How can the child health conferences be made more effective? There is no magic in merely undressing and weighing a child, looking him over hastily for defects, and referring him and his defects to the family physician. Yet, altogether too much of this kind of work is going on in the name of health supervision.

In the first place, the physician who conducts a child health conference must know the fundamentals of developmental pediatrics. He must have some idea of what "normal" physical and mental development is from early infancy through childhood. He must know the "points" of a "good" child just as a judge in a stock show knows the points of a fine animal. With a standard of excellence in mind and a knowledge of the fundamentals of nutrition and of mental health, the physician is able to give health supervision that helps each child realize his own potentialities for optimal mental and physical health. Of equal importance to the physician's knowledge is his ability to teach mothers how to understand their children better and to provide for their needs. The chief function of the health conference is education. It offers an excellent opportunity to teach parents those things about raising children which they have never had an opportunity to learn. Most parents, having grown up before the new science of nutrition was sufficiently developed for practical application in daily life, are entirely unaware of the possibilities it offers for greater health, happiness, and efficiency for their children. The same can be said of the new concepts of

mental health. This new knowledge will have no effect on the coming generation unless it is taught to the parents of today's children. This does not mean that child health conferences must all be conducted by pediatricians, but it does mean that the physicians who conduct them must know the essentials of preventive pediatrics. More and more, general practitioners are taking on the new rôle of supervising the health, as well as caring for the illnesses of their patients, both because of the increasing emphasis that is being placed on preventive medicine in the medical schools and because of public demand for this type of service.

RURAL CHILDREN

Though very few of the diplomates of the American Board of Pediatrics are practicing in rural areas, more babies are born in rural areas than in urban areas. The responsibility for caring intelligently for these rural children must be taken over by the general practitioners serving these areas. The presence of a well-run child health conference in a community exerts a good influence not only on the children and their parents but also upon the type of medical practice in the community, and naturally the more the practicing physicians in the community are taken into the public health program, the more they will be influenced by it.

In addition to the physician, what other factors are necessary for maximum effectiveness of the conference? An alert, well-trained public health nurse, more than anything else. The training of public health nurses has been such that it is safe to say that as a group they are more thoroughly saturated with the practical lessons of public health than the members of any other profession at the present time. The public health nurse is as indispensable in the child health conference as she is in any other part of the child health program. We are looking to the day when the physicians in the conferences will themselves interpret their findings and give their advice to the parents of the children in language that parents can understand. As things now stand, the parent all too often would get very little education from the conference if it were not for the interpretation of the doctor's findings and advice given by the nurse. Aside from this function and that of taking responsibility for the smooth running of the conference, the nurse has an invaluable function in direct teaching in the home. She makes the lessons of the health conference effective by explaining and demonstrating them in the light of conditions existing in the child's own home. Her knowledge of and ability to use community resources help to implement the work of the conference. Organized classes for mothers are proving invaluable adjuncts to the teaching in the conference, as they enable the nurse to reach larger numbers of mothers than she could reach through individual visits.

We are becoming increasingly aware of the need for increased facilities for corrective care in connection with all examinations of children. In rural areas where there are no clinics, existing community resources must be developed for those who cannot afford to pay for care from their own resources.

APPOINTMENT SYSTEM

When a conference becomes established and good service is being given, there is usually not the slightest difficulty in getting the mothers to bring their children. Frequently the greatest problem is that more children come than can be properly cared for. This is a serious problem which robs the conference of much of its value. Good work cannot be done in the midst of confusion and under pressure for time. It is desirable, therefore, to accept for service at each session only the number of children that can be handled properly and to state this number in the publicity. The appointment system can be made to work even in rural areas. Too much emphasis cannot be given to making the service continuous, to seeing the same children from infancy until they enter school. If we think only in terms of mortality, infancy is the more important period, but if morbidity is considered, supervision must not stop when the baby is a

year old. This is the best opportunity we have for practicing, and stimulating the practice of, preventive medicine. If the demands upon the health department staff for communicable disease control, community sanitation, and other important phases of the public health program are so great that it cannot possibly undertake to give child health supervision, let us say that supervision is not given because the staff is too small, not because the child is healthy and does not need supervision.

CONTINUOUS SUPERVISION

The health conference records should be transferred to the school and should become a part of the school medical record. We are trying to teach the value of continuous supervision. There is no logic in setting up separate infant and preschool conferences. This is a hangover from the days when we were concerned only with infant mortality. It is an entirely artificial separation, as growth and development in the child is a continuous process. Neither is there logic in allowing a child to go without health supervision until just before he enters school, and then have him examined in a preschool summer roundup. Health supervision should be continuous from birth until maturity. Preschool summer roundups conducted only for the purpose of examining children once before entrance to school are outmoded. Parents should be taught the value of adequate health supervision throughout the entire preschool period.

In some places the complaint has been made that mothers will not continue to bring their preschool children to the conference. Where this is so, the conference has failed in its teaching to convince the mothers of the importance of continuous supervision throughout childhood, and more than likely the conference physician is not giving the mothers any real help with their problems. It requires a great deal more skill and knowledge of child development and behavior to manage the manifold problems of the preschool period than to supervise the feeding and care of an infant.

In the expanding program of maternal and child health under the Social Security Act the official health agencies have been confronted with the problems of establishing and maintaining high standards of medical and nursing services in the large number of conferences being established. The number of child health conferences under the auspices of state health departments has increased tremendously during the past five years. A number of interesting methods have been developed by the states for setting and maintaining high standards in these conferences. A number of states employ pediatricians on the state staff to work with the local practicing physicians or health officers who have not had experience in child health supervision. The West Virginia Health Department now plans to appoint a pediatrician to the maternal and child health staff to assist with this phase of the program. This is a forward step. In other states, practicing pediatricians give this type of service to the conferences in the area in which they live and are paid on a part-time basis by the state agency. Other states have developed training centers where physicians who are to conduct health conferences go for a short course of training. In some states, physicians interested in participating in conference work submit their names to the secretary of their local medical association and from these names the committee of the state or local medical association selects names for submission to the state department of health. Preference is given to physicians with a special interest in pediatrics. The physicians selected attend six conferences in an approved training center. The last conference of the six is conducted by them under the supervision of the physician in charge. If more than one physician in the community is recommended, each gives continuous service for a stated period, preferably not less than six months.

EXPENSE MERITED

These physicians are paid for their services in child health conferences by the state health department. This program is worth every

dollar it costs, in terms of better health for the children who attend the conferences, in terms of what the parents of those children have learned, and in terms of what these doctors have learned about keeping children well—knowledge which they will utilize in their private practices and thus greatly extend the influence of the service. Services such as these have an incalculable value to any community in terms of enlightenment and in terms of the future health of its citizens. From the standpoint of practical public health administration, there seems no doubt that many local health officers cannot, themselves, devote the time that is necessary to conduct health conferences properly. The increasing use of practicing physicians in many areas is proving a satisfactory answer to that problem.

One of our great needs now is an index to measure progress in positive health, based on standards of healthful living rather than upon death rates. The White House Conference on Children in a Democracy recommended that, "The local community should provide maternity care, health and medical services for children, as needed, as part of its public health responsibility, utilizing available qualified services and facilities."

REFERENCES

1. Vol. 36, No. 8 (August, 1940).
2. Vital Statistics—Special Reports. 1938. Vol. 8. No. 49. p. 1187. U. S. Bureau of the Census. Washington, 1940.

New Use for Stethoscope

A new use for the stethoscope is reported by the regular London, England, correspondent of *The Journal of the American Medical Association* in the March 15 issue. He says:

"In gratitude for his work in removing delayed action bombs which fell in the east end of London, Captain Robert Davies, who is in command of the bomb disposal squad, has recently been presented with a stethoscope by the resident staff of one of the hospitals. He has frequently borrowed a stethoscope from the hospital in order to listen to the ticking of delayed action bombs before removing them."

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

Experimenters have worked to devise a means of making chest x-rays of groups of people, economically and at a rapid rate. Last year approximately 490,000 students received special service which, in most cases, included an x-ray examination. Industrial groups are demanding a similar service. Mobilization for military training has further focused attention on mass methods of x-ray examination. S. Reid Warren, Jr., of the Moore School X-ray Laboratory here presents brief comments of six methods now in use. Estimates of costs and weights are averages from which particular data may differ.

Chest X-ray Methods

Stereoscopic 14 by 17 inch Films: This is the best single method of chest x-ray examination. It requires expensive ($4,000-$5,000), bulky (1,000 pounds) equipment which must be permanently installed in conjunction with an adequate system to supply electric power to it (230 volts, 35-150 amperes alternating current). Exposure times from 1/30 second to 1/10 second are generally used. A specially equipped darkroom is required to process the films. Two films (unexposed film—$1.50) are required for each examination. It is difficult to make exposures, process the films, and examine them fast enough to use this excellent method for mass surveys. The excellence of this method is the result of (1) high contrast within the diagnostic area of each roentgenogram, (2) small unsharpness or blurring of shadow borders, (3) convenient size for direct viewing, and (4) stereoscopic perception. (Fig. 1)

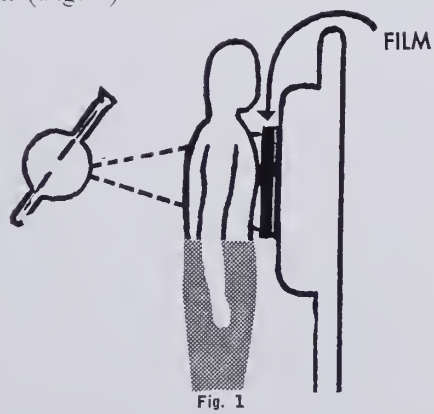

Fig. 1

Single 14 by 17 inch Films: The same kind of x-ray generating appartus is used for producing

(Continued on page xxvii)

President's Page

The passage of Senate Bill 100, completely separating workman's compensation cases from hospital list practice, was our major accomplishment at the recent session of the legislature. This measure, enacted on March 5, 1941, and effective in 90 days, expressly forbids contracts between employers and hospitals for the care and treatment of compensable injury cases. Any employer or hospital found guilty of violating the provisions of this act is subject to a fine not to exceed $1,000 and imprisonment not to exceed one year, or both.

This bill accomplishes what was intended by the amended Compensation Act of 1935. Prior to 1935, almost all compensation work in southern West Virginia was included in the hospital "list" contracts which were paid for by the employees. The 1935 act remedied this situation until two or three years ago, when a number of employers and hospitals began negotiating private contracts to evade the intent of the 1935 amendment. Under the terms of these private contracts, employers would agree to pay a fixed amount per month per employee to the hospital and the hospital would agree not to render any bills to the compensation department for the care and treatment of compensable injuries. Such contracts withdrew from the injured employees the rights to which they were entitled under the compensation law.

This new measure enacted in 1941 not only clarifies the whole situation but it adds the teeth which this particular section has so badly needed. The Association is going to see that this new statute is enforced. If legal proceedings are necessary, we expect to proceed against hospitals as well as employers.

Senate Bill 100 was sponsored and put through by the West Virginia State Medical Association with no assistance from any other source. The bill was put through for the purpose of improving hospital facilities; not for the purpose of making money for hospitals. During the consideration of Senate Bill 100, more than one hospital owner told us that his institution was compelled to reduce service to a minimum because of the grossly inadequate amount allowed for compensation injury cases. This new act will provide adequate funds for the proper care and treatment of all injured employees. The affected hospitals must see to it that the increased revenue provided by Senate Bill 100 is used for the purpose of giving better service.

This measure should have a wholesome effect on industrial medicine and hospitalization in West Virginia. It straightens out one of our most troublesome problems and should pave the way toward a better and more trustful understanding between the hospitals themselves. It is another step toward better medical, surgical and hospital treatment for West Virginia. It removes one of the obstacles which has always faced our Association before in the consideration of voluntary sickness insurance, on which our Medical Service Committee is still working.

The passage of Senate Bill 100, consideration of the recommendation of our Medical Service Committee relating to voluntary sickness insurance for West Virginia, the plan of our Medical Education Committee with reference to a four year medical college, and many other matters of vital importance to the profession, will be presented at the seventy-fourth annual meeting in Charleston on May 12-14, 1941. Doctor, make your plans now to attend the Charleston meeting and participate in these timely and vital considerations.

Robt. C. Burford

President.

West Virginia Medical Journal

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CANCER CONTROL

The month of April brings to us again the annual educational campaign of the Women's Field Army for the control of cancer. The work of these good women in the past has been so well directed and so sensible that we have only commendation for their efforts.

The problem of cancer, while being subjected to intense study and investigation by many agencies, is still by and large an unsolved problem. True, we know many phases of the biology and pathology of the disease, but the actual cause, what we might term the mainspring of carcinogenesis, is unknown. Likewise we know the value of early diagnosis and of prompt application of the known remedial agents of proven value, surgery, radium and x-ray, but until the etiology is clearly understood, control efforts must be directed toward education by both laity and profession and to prompt and efficient treatment of recognized cases.

Educational efforts toward the laity should stress two points: (1) The necessity for regular periodic physical examinations and for complete diagnostic workout of all suspected cases; and (2) the imperative necessity of following absolutely professional advice in cases of known cancer. Delay is not only dangerous but often fatal, for there is no such thing in cancer biology as a tendency to spontaneous cure. The progress of the disease is continual advancement and, unless the known extrinsic curative agents — surgery and/or irradiation — are used in each case, death is the inevitable result for each individual sufferer.

Stock taking in any subject under consideration is always valuable and enlightening. Last year we called attention to the fact that deaths in West Virginia from malignancy in the decade from 1928 to 1938 had increased 14.8 per cent. In 1938 the mortality rate in this state was 72.11 per hundred thousand population. For 1939 the corresponding rate was 74.5, a percentage increase for the year of 3.31. Despite the obvious facts that there is continual improvement in cancer diagnosis and that the average age of the population is increasing, there must also be an absolute increase in cancer deaths among the population of West Virginia.

In the present state of our knowledge of cancer education is the outstanding available control weapon. We, therefore, commend the great work of Cancer Week to our entire populace. This program has been carried on in such close harmony with medical ideals and has been so free from hysteria and fright that we bespeak the aid and support of the profession of the state in this movement.

Our thanks and heartiest good wishes to the ladies who are engaged in this noble work.

LEGISLATIVE RESULTS

The 1941 session of the West Virginia legislature adjourned on March 8 with fewer bills enacted than at any session for the past 30 years. The Association fared unusually well. We sponsored one bill, which passed; we endorsed a second bill which made progress but failed to pass, and we opposed a third bill which was successfully defeated. Following is the Legislative Committee's report on the three measures above mentioned:

Senate Bill 100, introduced by Dr. Wylie, was the only Association sponsored bill. Its

purpose was to completely divorce workman's compensation cases from hospital list practice. The first accomplishment along this line was in 1935 when the Association fought through a bill with the same objective but without any penalty clause attached. The 1935 bill was made rather ambiguous in its journey through the legislature. As a result, in recent years many hospital owners and employers of labor entered into contracts whereby hospitals agreed that for a fixed sum per month per man, paid by the employer, the hospital would not send bills to the compensation fund. In some cases this monthly stipend per man was as low as 10 cents. The inevitable result of this system would eventually have been a marked deterioration of medical and hospital service. Senate Bill 100, which was passed on March 5, not only clarifies the language but also provides that "any employer or hospital violating the provisions of this section shall be guilty of a misdemeanor and upon conviction thereof shall be sentenced to pay a fine not exceeding $1,000 or to undergo imprisonment not exceeding one year, or both." This bill becomes effective June 1, 1941.

House Bill 246, the proposed hospital licensing bill, was introduced by Dr. Evans and was reported out favorably by the House Committee on Medicine and Sanitation, but got behind a mass of general legislative proposals in the final days of the session and never reached a vote. This bill, sponsored by the Hospital Association of West Virginia, would have created a hospital licensing committee consisting of four members and the state health commissioner. The hospital committee was empowered to appoint an inspector to inspect every hospital in the state at least once a year. The committee was also empowered to set up rules and regulations for hospitals in various communities to meet. The bill not only had our support but also the support of the Public Health Council and the Department of Public Assistance. Many of the controversial portions of the bill were ironed out in the committee hearings during the recent session, and early opposition to the bill by various factions was smoothed out and withdrawn. The bill made many friends and had strong support. With proper management and good luck, it should be enacted into law if presented again in 1943.

Senate Bill 108 was the biennial "Faith Healing" bill sponsored by the Christian Science church. This bill now has been put through in about 44 states. Its purpose is to exempt faith healers and spiritual healers from the provisions of the medical practice act, so that these people can open offices in downtown business sections and advertise and collect fees for their services. The bill was introduced by Senator Earl H. Smith of Marion county. It met with the usual vigorous opposition of the Association, combined with some excellent work against the bill by the Woman's Auxiliary. Senate Bill 108 never got out of committee.

Both the administration's Labor Relations Act and Wage and Hour Act, in which the hospitals of the state displayed a great interest, went down to defeat in the final days of the session. Failure of a proposed use tax, which passed the senate, will no doubt mean a saving to both physicians and hospitals in taxes on equipment purchased from sources outside the state. The exemption of bread, butter, milk, flour and eggs from the consumers' sales tax will result in substantial savings for many hospitals, as they purchase large quantities of these foods.

We heartily commend our Legislative Committee for its excellent work and for the splendid results accomplished. We daresay few organizations can equal this successful record. For the edification of our readers, we give you the complete personnel of this efficient and hard-working group. Headed by Dr. Ward Wylie, Mullens, as chairman, the committee members include Dr. George Evans, Iaeger; Dr. Frank V. Langfitt, Clarksburg; Dr. R. H. Dunn, South Charleston; Dr. C. E. Watkins, Harvey, and Drs. Russel Kessel and Walter W. Point, Charleston.

NEW HEALTH COMMISSIONER

Dr. Clifton F. McClintic of Williamsburg, former member of the legislature and former warden at the state penitentiary, was appointed state health commissioner by Governor Neely on March 15, succeeding Dr. Arthur E. McClue of New Cumberland. Dr. McClintic has had a wide experience as a practicing physician, served four years teaching high school in Minnesota, was an instructor in the medical departments of several universities and once was acting dean and administrative officer of the University of Cincinnati College of Medicine. He served in the U. S. Army Medical Corps during the World War.

Dr. McClintic first attracted wide public notice in West Virginia when he served as chairman of the Committee on Taxation and Finance in the 1933 legislature. This was the session which made sweeping changes in the government setup, including state control of all highways and the county unit school system. Shortly after the close of the 1933 session, Dr. McClintic was appointed warden of the penitentiary at Moundsville and led the fight which resulted in the medium security prison at Huttonsville. When at Moundsville he applied his medical knowledge to a number of worthwhile prison reforms.

Dr. McClintic was born in Greenbrier county, graduated from Randolph Macon, and received his M. D. degree from the University of Cincinnati in 1919. According to his permanent record card at the Association headquarters, Dr. McClintic took postgraduate work at the Mayo Clinic, the University of Wisconsin, the New York Urological Institute, and at London, Edinburgh, Paris, Strasburg, Amsterdam and Dublin.

Dr. McClintic has had an interesting and varied experience in public life and at the present time is president of the Greenbrier County Farm Bureau, president of the West Virginia Wild Life League, president of the Lewisburg Rotary Club and a member of the board of directors of the West Virginia Farm Bureau Federation.

Contacted by a representative of the Journal shortly after his appointment, Dr. McClintic said he was too new on the job to make any statement with reference to plans and policies of his administration as health commissioner. He did speak freely, however, about general public health functions with reference to the medical profession. "I want to be of as much help as possible to the medical profession," Dr. McClintic said. "I feel that the work of the State Health Department should be centered on preventive rather than therapeutic medicine. Another important phase of public health work should be educational, not only to the importance of observing measures for the prevention of disease but also to take advantage of the professional and hospital facilities which are furnished by the medical profession and the hospitals."

While we are unfamiliar with the political issues involved, we wish to commend Dr. McClue for his very excellent work as state health commissioner during the past eight years. He was a willing and loyal servant to the state and to his profession. In returning to private practice, he does so with the esteem and the best wishes of the medical profession.

We also desire to commend Governor Neely upon his splendid selection of Dr. McClintic for this important office. We extend our heartiest congratulations to Dr. McClintic and assure him that he assumes office with the support and cooperation of the entire medical profession of the state.

THOSE UNPAID DUES

The Association's delinquent list goes into effect on April first. On that date, all Association members whose 1941 dues have not yet been taken care of will be temporarily dropped, their mailing plates will be removed from the Journal mailing list and their names will be placed on the delinquent list to remain there until the dues are paid.

Members whose dues are not paid by the end of the year are permanently dropped.

The 1941 membership dues have been coming in unusually well and indications are that the delinquent list will be small. Believing that most members become delinquent through carelessness, we take this opportunity to call attention to the annual "deadline." This is the last issue of the JOURNAL that will be sent to members whose dues are unpaid. We hope all unpaid members will send their checks to their county secretaries right away.

Lung Disease in Infants

What he terms a hitherto undescribed form of epidemic lung disease occurring in newborn infants is described in *The Journal of the American Medical Association* for March 8 by John M. Adams, M D., Minneapolis.

The disease appeared in epidemic form with 32 cases during January, February and March, 1937. There were nine deaths. The disease, Dr. Adams says, was a virus infection similar to influenza, but he ruled out influenza as ferrets inoculated with fresh material from the patients failed to generate neutralizing bodies against the influenza virus. Further evidence that the epidemic infection was a virus disease was indicated by its extreme contagiousness, its distinctive symptoms (cough, low grade fever, labored breathing and skin blueness), characteristic lung and blood changes and the failure of investigators (Minnesota State Board of Health) to identify the causative bacterium.

"Several recent reports of 'atypical pneumonia,' " the author points out, "indicate that the recognition of viruses as possible causes of pulmonary (lung) disease is no longer limited to epidemic influenza. Much further study and classification of such disease is obviously needed at the present time. The ubiquity of the viruses must put physicians on guard for similar outbreaks of infection of the respiratory tract in infants."

The conviction that the disease was due to a virus is further borne out, Dr. Adams says, by the fact that the mortality was one hundred per cent in the premature infants affected. Most newborn infants have a short immunity to other than virus diseases.

County Society News

Cabell County

The regular meeting of the executive committee of the Cabell County Medical Society was held on March 6, 1941.

The National Defense Committee presented a plan which provides that members of the society shall take part in examination of the draftees of the local selective service boards.

This will involve all members of the society regardless of their specialty, and it is felt that in so distributing the work it will probably be unnecessary for any physician to spend more than a day or two in the entire year.

It is suggested that the examinations be done at some central location rather than in the private offices.

The committee will notify the physicians of their assignments. This plan has been endorsed by the executive committee.

Dr. L. B. Gang will serve as acting chairman of the National Defense Committee during the illness of Dr. I. I. Hirschman.

The Cabell County Medical Society held their regular meeting on March 13 at the Hotel Pritchard, Huntington. Dr. Jack Basman of Charleston addressed the society on "Important Problems Arising in the Field of Modern Chemotherapy." His short and practical paper showed how these newer chemotherapeutic agents must be properly used to be most effective. Reasons for failure in the clinical use of these drugs and the dangers associated with their use, were discussed. Doctors Harwood, Folsom, Hodges and J. H. Moore gave prepared five minute discussions each on the failures of chemotherapy which have occurred in their special fields.

Changes and proposed amendments to the constitution and by-laws were brought up.

COLE D. GENGE, *Secretary*.

Eastern Panhandle

At a meeting of the Eastern Panhandle Medical Society held December, 1940, at Martinsburg, a committee was appointed to study the advisability of the members entering into an agreement to attend clients subscribing to a fund, set up by the Farm Security Administration.

The committee met with Alec Wilton, representing the Farm Security Administration, January 8, 1941, and discussed with him certain phases of the agreement as set up by the Farm Security Administration.

The committee recommended that no agreement be entered into to care for clients of the Farm Security Administration for the following reasons:

1. Only 15 cases have been signed.
2. The uncertainty of the number to be treated from year to year.
3. The probability of many unnecessary calls to these clients, and demands made by them from time to time.
4. That to enter an agreement as presented, would be detrimental to the physician and patient alike.

MAX O. OATES, *Secretary*.

Fayette County

The Fayette County Medical Society held their regular monthly meeting at Conley Hall, Montgomery, February 25, 1941.

Dr. H. H. Ritter, Montgomery, presented the scientific program with his subject of "Obstetrical Analgesia."

Dr. Louis Y. Peskoe of Boomer was admitted to membership in the society.

G. A. DANIEL, *Secretary*.

Harrison County

On March 6, the Harrison County Medical Society held their monthly meeting. Dr. Edward King of Cincinnati University spoke on the subject, "Plastic Surgery of the Nose and Face." His lecture was illustrated with lantern slides and a movie.

The Clarksburg chapter of the Exchange Club notified the society that the "iron lung" and resuscitator, which were sponsored by the club, and purchased by popular subscription of Harrison countians, were now available for the medical society's use.

Dr. D. S. Hess was elected to membership in the society by transfer from Logan county. Dr. Wm. C. Huffman of Spelter, Dr. Andrew J. Weaver and Dr. Joseph Gillman, of Clarksburg, are new members.

L. E. NEAL, *Secretary*.

Kanawha County

The regular March meeting of the Kanawha Medical Society was held in the ballroom of the Daniel Boone Hotel, Charleston, on March 11 at 8:30 p. m. The essayist was Dr. Carl H. Lenhart, Professor of Surgery at Western Reserve University, and his subject was "Random Remarks on Gall-bladder Disease."

The principal item of business was the budget for entertainment of the State Association at the convention in May. The following committee on arrangements for the state meeting has been appointed: P. A. Tuckwiller, general; R. K. Buford, public meeting; R. H. Walker, Auxiliary advisor; Paul Revercomb, exhibits; W. P. Black, transportation; A. A. Wilson, golf; S. L. Bivens, tennis; G. G. Irwin, assistant to executive secretary; T. G. Reed, refreshments; Russel Kessel, dancing; W. A. Thornhill, Jr., budget; Joe Savage, banquet, meeting halls, etc.

WM. A. THORNHILL, *Secretary*.

Logan County

The Logan County Medical Society held its regular monthly meeting March 12, at eight o'clock in the Aracoma Hotel, Logan. There was no scientific program presented and the meeting was taken up with business. There were fourteen members and two guests present.

W. P. HAMILTON, *Secretary*.

Marshall County

The Marshall County Medical Society met on Tuesday, March 11 at the Elks Club, Moundsville. Dr. Joseph C. Peck of Moundsville was elected president of the society. Other officers elected were:

Dr. W. G. C. Hill, vice president; Dr. J. A. Striebich, secretary-treasurer; Dr. L. H. McCuskey, censor for three years; Dr. Harold B. Ashworth, and Dr. D. B. Ealey, delegates to the state meeting in May.

Dr. Robert A. Ashworth presided during the business session. There was a good attendance.

J. A. STRIEBICH, *Secretary*.

Parkersburg Academy

The regular monthly meeting of the Parkersburg Academy of Medicine was held at the City Hospital, Parkersburg, on the evening of March 5, 1941. Dr. Welch England, president, presided. The guest speaker of the evening was Dr. George

Lyon of Huntington who gave a highly interesting presentation on "Epidemic Diarrhea of the Newborn." The business session was dispensed with.

The academy voted that the Medical Defense Committee select three teams of eight men each to examine for the three draft boards at a place selected by the committee.

A special business meeting of the academy was held on the evening of March 12 at the St. Joseph's Hospital with Dr. England presiding. Dr. Barker reported for the Defense Committee and read a list of physicians to serve for the draft boards, which was accepted. Dr. Lutz reported for the D.P.A. Committee, after which the academy voted to authorize the committee to pass on all medical and hospital reports with written authorization from the Department of Public Assistance.

The academy voted to suspend the dues of all members called to active military duty. A committee was appointed to contact the Council of Social Agencies on the amount of charity work done in Parkersburg in 1940.

The following members were elected to the board of trustees: Dr. Richard Hamilton, Dr. Paul C. Starkey, Dr. T. W. Keith, Dr. T. R. Boling and Dr. G. M. Harsha.

A. C. WOOFTER, *Secretary*.

Raleigh County

The Raleigh County Medical Society held its regular monthly meeting at Leslie's Diner, Beckley, on the evening of February 20, 1941. Dr. Ralph G. Carothers of Cincinnati, Ohio, was the guest speaker. He gave a very interesting talk on "The Treatment of Compound Fractures."

Thirty-seven members and guests were present.

Dr. E. S. Dupuy and Dr. D. B. Jarrell were elected honorary members of the society.

The regular meeting of the Raleigh County Medical Society was held at Leslie's Diner in Beckley on the evening of March 20 with a good attendance. The program consisted of a moving picture on pneumonia, furnished by Lederle Laboratories. This was followed by a general discussion on pneumonia led by Dr. D. C. Ashton.

Dr. M. C. Banks, Raleigh, and Dr. J. M. Teter, Beaver, were elected to honorary membership in the society.

A committee consisting of Drs. S. A. Ford, H. A. Shaffer and R. C. Mitchell was appointed to cooperate and advise with the Woman's Auxiliary.

CLARK KESSEL, *Secretary*.

STATE NEWS ITEMS

Dr. George M. Lyon of Huntington has been selected for promotion to the grade of commander, by the Naval Reserve Selection Board.

* * *

Dr. W. P. Hamilton, of Logan, secretary of the society, is recovering from an emergency appendectomy.

* * *

Dr. Frank C. Long is a new member of the Mason County Medical Society. He lives at Point Pleasant.

* * *

Dr. John W. Yost, Jr., has returned to Williamson after several months' residence in Kentucky. He will be associated in practice with Dr. George W. Easley.

* * *

Dr. George R. Cunningham of Killarney has been sent to Porto Rico in the line of active military duty.

* * *

Ohio County Medical Society lists the following new members: Drs. N. K. Joseph, J. W. Walters, J. S. Meier, Robert Bandi, and Robert U. Drinkard.

* * *

Dr. L. J. Moore has moved from Bancroft to 312½ Sixth Avenue, Huntington.

* * *

Dr. B. B. Nicholson (Lt. Commander) of Parkersburg, is stationed at the U. S. Naval Hospital, Portsmouth, Virginia.

* * *

Dr. W. F. Daniels and Dr. C. S. Duncan of Huntington are both in military service with the USNR at Guantanamo Bay, Cuba.

* * *

Dr. M. A. Rafferty of the School of Medicine, Morgantown, and Dr. John Stecker are new members of the Monongalia County Society.

* * *

Dr. R. M. Sonneborn has returned to Wheeling from his western sojourn.

* * *

Dr. J. Cobb Laslie of Charleston has been sent to Fort McClellan, Alabama, as 1st Lieutenant, 151st Medical Battalion.

Dr. Lee Dobbs, Jr., of Wheeling has been assigned to the Naval Air Base at Pennsacola, Florida and Dr. A. L. Shinn, formerly of Wheeling, is now on duty at the Marine Base at San Diego, California.

* * *

Dr. A. Robert Stork, formerly located at Norton, Virginia, is a new member of the Kanawha Medical Society and is located in the new Atlas Building, Charleston.

* * *

Dr. Garret Jackson and Frank R. Jamison of Mullens are new members of the Wyoming County Medical Society. Dr. K. G. Khorozian and Dr. T. H. Millman of Pineville are also new members.

* * *

Dr. W. P. Sammons of Wheeling is a patient in the U. S. Veterans' Hospital at Oteen, N. C.

* * *

Dr. Richard J. Stevens of Huntington is a new member of the Cabell County Society.

* * *

Dr. R. E. Traul of Lorado is in Long Island, N. Y., for postgraduate medical work.

Daily Sugar Allowance

Two tablespoonfuls daily is recommended as the maximum allowance of sugar by *Hygeia, The Health Magazine.*

In answer to an inquiry as to the effect of sugar in the diet, *Hygeia* says: "One pound of sugar provides 1,800 calories and nothing else. It contributes none of the nutritionally important protein foods as whole grains, fruits and vegetables.

"The eating of white sugar, either cane or beet, in large amounts, may place a burden on the pancreas. The pancreas secretes a substance which is necessary to enable the body to use sugar as a fuel food. If the pancreas is impaired or injured, its ability to secrete insulin is also impaired and as a result the body loses its ability to burn sugar.

"There is also evidence that excessive consumption of sugar may weaken the protective power of the liver and thereby cause numerous so-called bilious symptoms. Brown sugar has the same effect as white sugar. Eating sugar in excessive amounts may make one feel dull and bilious because of these reasons."

General News

The Charleston Meeting

Plans for the seventy-fourth annual meeting of the West Virginia State Medical Association at Charleston on May 12, 13 and 14, are rapidly nearly final completion and the finished draft of the program and all convention activities will be published next month in the convention number (May) of the Journal. The Committee on Scientific Work held its final meeting on March 27 at which time the last remaining convention details were worked out.

The opening meeting will be called to order in the auditorium of the Shrine Mosque, directly across the street from the Daniel Boone Hotel, on Monday, May 12. Following the opening exercises, two scientific papers will be presented during the morning session. The first essayist will be Dr. Stanley Gibson, associate professor of pediatrics at Northwestern University School of Medicine, whose paper will be on "Rheumatic Fever." The second speaker will be Dr. W. G. Leaman, Jr., professor in medicine in charge of the Department of Cardiology, Woman's Medical College of Pennsylvania, Philadelphia. His subject will be "Prognosis in Heart Disease."

On Monday afternoon there will be three specialty meetings, representing the Section of Pediatrics, the Industrial Physicians group, and the West Virginia Heart Association. Dr. Gibson will conduct a roundtable on "Rheumatic Fever" before the pediatric group. Dr. Leaman will talk to the Heart Association on "Recent Additions to Our Knowledge of Cardiovascular Disease, with Special Reference to Their Clinical Application."

The Society of Industrial Physicians and Surgeons has scheduled three outstanding national leaders in the field of industrial medicine for their sectional meeting on Monday afternoon. These men are Dr. Henry H. Kessler, chief medical examiner of the New Jersey Compensation Department, Newark; Dr. R. R. Sayers, director of the United States Bureau of Mines, and Dr. Paul A. Neal, chief surgeon of the Research Section, Division of Industrial Hygiene, of the National Institute of Health.

On Monday evening, May 12, there will be a public meeting at the Municipal Auditorium in Charleston at which time Dr. Morris Fishbein of

Chicago, editor of the *Journal of the American Medical Association,* will be the principal speaker. This will be followed by a dance at the Edgewood Country Club which is being planned by several of the Charleston doctors.

Dr. Kessler will open the Tuesday morning program, followed by essayists representing the Eye, Ear, Nose and Throat Section and the Section on Internal Medicine. The Oration on Medicine will be delivered on Tuesday morning by Dr. Jacob A. Bargen of the Mayo Clinic, Rochester, Minnesota.

On Tuesday afternoon the Sections on Eye, Ear, Nose and Throat and Internal Medicine will meet. Tuesday evening has been set aside for the annual Presidential Address by Dr. Robert King Buford of Charleston, whose subject will be "The Physician in the Changing World." Immediately following Dr. Buford's address, the final meeting of the House of Delegates will be held, at which time officers for the coming year will be elected.

Dr. I. V. Ravdin, professor of surgery, University of Pennsylvania School of Medicine, Philadelphia, will open the general program on Wednesday morning. His subject will be "Some Problems of Biliary Tract Surgery." He will be followed by Dr. T. J. Williams of the University of Virginia Hospital on "Management of the Toxemias of Late Pregnancy." Dr. George J. Thomas, Pittsburgh anesthetist, will present a paper on "Choice of Anesthesia for Emergency Procedures." The annual Oration on Surgery will be presented on Wednesday morning by Dr. Hugh A. Bailey of Charleston.

The Section on Surgery and the Obstetrical Society will meet on Wednesday afternoon, with Dr. Ravdin as the chief speaker before the surgical group and Dr. Williams as the obstetrical essayist. Following the close of these two sessions, the convention will wind up Wednesday evening with the annual banquet and ball at the Daniel Boone Hotel.

Complete information about the annual golf tournament and tennis tournament will be published in the May issue. Prizes for these two events were being assembled at press time.

The meeting of the House of Delegates will be held on Monday afternoon, May 12, and Tuesday evening, May 13. The Council will meet on Sunday evening and thereafter at the call of the chairman.

Dr. William A. Thornhill, secretary of the West Virginia Heart Association, has asked the JOURNAL to announce that all Association members interested in heart disease are invited to become members of the heart group. Checks for $2.00 covering 1941 dues should be sent to Dr. Thornhill, Atlas Building, Charleston.

Reservations for scientific exhibit space have been coming in during the past month and an excellent display of exhibits is being planned. Doctors, hospitals, clinics and other allied groups interested in having scientific exhibits at the Charleston meeting should get in touch with Dr. Paul Revercomb, Medical Arts Building, Charleston.

Pediatricians to Meet

The Region II meeting of the American Academy of Pediatrics will be held in Richmond, Virginia, on April 24 and 25, with headquarters at the John Marshall Hotel. Among those who will appear on the program will be Dr. George M. Lyon of Huntington. At the morning session on April 25, Dr. Lyon will give a paper on "Food Contaminations and Poisons."

The program will open at 10 o'clock on the morning of April 24 with a roundtable discussion on "Mental Health of the Child as Related to National Defense." Following Dr. Lyon's paper, there will be a roundtable on "Communicable Diseases and Their Relation to the Child During National Defense." This will conclude the two day program.

Chairmen of the three roundtable discussions will be Dr. Horton Casparis, professor of pediatrics, School of Medicine, Vanderbilt University; Dr. Frederick F. Tisdall, associate professor of pediatrics, University of Toronto, and Dr. Wilburt C. Davison, professor of pediatrics, School of Medicine, Duke University.

Industrial Physicians

An Institute of Industrial Medicine and Industrial Hygiene, sponsored by the American Association of Industrial Physicians and Surgeons, and the American Industrial Hygiene Association, will be held in Pittsburgh on May 5-9, 1941, with headquarters at the William Penn Hotel. Scores of papers and discussions are scheduled on the medical and engineering phases of employee health protection.

One of the highlights of the meeting from the standpoint of the doctors in attendance will be the series of dry clinics in industrial medicine and surgery which will be held at Mercy Hospital on the

opening day, Monday, May 5. Dr. John P. Griffith, professor of surgery at the University of Pittsburgh, will be in charge.

Important subjects to be discussed include "Industrial Backs", "Practical Results of Periodic Physical Examination", "Relation of Trauma to Disease", "Contact Dermatoses", "Mental Hygiene in Industry", "Trauma Other Than Fractures", and "Sequelæ of Head Injuries."

American College of Physicians

The twenty-fifth annual meeting of the American College of Physicians will be held at Boston on April 21-25, with general headquarters at the Statler Hotel. In addition to members of the college, all qualified physicians who wish to attend the sessions may do so by paying a registration fee of $12.00 which shall entitle the registrant to a one year's subscription to the *Annals of Internal Medicine*.

Further information with reference to the Boston session may be obtained by writing E. R. Loveland, Executive Secretary, American College of Physicians, 4200 Pine Street, Philadelphia.

Academy of Physical Medicine

The American Academy of Physical Medicine will hold its nineteenth annual meeting and scientific session on April 28, 29, 30, 1941, in New York, with headquarters at the Hotel Pennsylvania, where lectures, symposia, clinical papers, motion pictures, and the exhibits will be presented. Clinics will be held at the Medical Center, New York Orthopedic Hospital, Postgraduate Hospital, and the Skin and Cancer Hospital. There will be an evening session at the Academy of Medicine Building and a banquet at the Hotel Pennsylvania.

Physical medicine in relation to general medicine and the specialties will be the underlying theme of the topics under discussion. These include new developments in electrotherapy, electrosurgery, radiation therapy, hydrology, physical education, military medicine, aviation medicine, and laboratory reports on related investigation.

The sessions are under the direction of Harold D. Corbusier, M.D., Plainfield, N. J., president; Herman A. Osgood, M.D., Boston, secretary; Fred H. Albee, M.D., New York, chairman of the committee on arrangements; William D. McFee, M.D., Boston, chairman of the committee on program; William Benham Snow, M.D., New York, chairman of the committee on clinics, and Franklin P. Lowry, M.D., Newton, Mass., chairman of the committee on exhibits.

All members of the medical profession and those of related interests are invited to attend the scientific program. There will be no registration fee. Address inquiries to Herman A. Osgood, M.D., Secretary, 144 Commonwealth Avenue, Boston, Massachusetts.

American Board of Obstetrics

The general oral and pathological examinations (Part II) of the American Board of Obstetrics and Gynecology for all candidates (Groups A and B) will be conducted at Cleveland, Ohio, by the entire board from Wednesday, May 28, to Monday, June 2, 1941, inclusive, prior to the opening of the annual meeting of the American Medical Association.

Formal notice of the time and place of these examinations will be sent each candidate several weeks in advance of the examination dates.

Candidates for reexamination in Part II must make written application to the secretary's office before April 15, 1941.

The board requests that all prospective candidates who plan to submit applications in the near future request and use the new application form which has this year been inaugurated by the board. The secretary will be glad to furnish these forms upon request together with information regarding board requirements. Address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh, Pennsylvania.

A.M.A. Golf Tournament

The American Medical Golfing Association will hold its twenty-seventh annual tournament at Cleveland Country Club and Pepper Pike Club in Cleveland, Ohio on Monday, June 2, 1941. Thirty-six holes of golf will be played in competition for the fifty trophies and prizes in the eight events. Trophies will be awarded for the Association championship, thirty-six holes gross, the Will Walter Trophy; the Association Handicap Championship, thirty-six holes net, the Detroit Trophy; Championship Flight, First Gross, thirty-six holes, the St. Louis Trophy; Championship Flight, First Net, thirty-six holes, the President's Trophy;

Eighteen Hole Championship, the Golden State Trophy; Eighteen Hole Handicap Championship, the Ben Thomas Trophy and the Atlantic City Trophy; Maturity Event, limited to Fellows over 60 years of age, the Minneapolis Trophy, and the Old Guard Championship, limited to past presidents, the Wendell Phillips Trophy. Forty other prizes will be awarded for the various flights.

The Cleveland Golf Committee is under the chairmanship of Dr. John B. Morgan, 1822 Republic Bldg., Cleveland, who headed the golfing group when the A. M. A. met in Cleveland in 1934. He will be assisted by Drs. William J. Engel, Farrell T. Gallagher and F. W. Merica. All male Fellows of the American Medical Association are eligible and cordially invited to become members of the AMGA. Write Executive Secretary William J. Burns, 2020 Olds Tower, Lansing, Mich., for application blanks. Participants in the AMGA tournament are required to present their home club handicap, signed by the club secretary, at the first tee on the day of play. No handicap over 30 is allowed.

Insurance Plan Discontinued

It should be a matter of no small interest to those interested in voluntary sickness insurance that an experiment on voluntary sickness insurance carried on for several years by the Douglas County Medical Society in Superior, Wisconsin, was recently discontinued. Discontinuance of a somewhat similar trial plan in Milwaukee was also announced. Reasons given were: First, exceedingly small demand; second, high cost of acquiring subscribers; third, plan did not reach low income group; fourth, high operating costs, and fifth, premiums too small to permit payment of minimum standard fees to the physicians.

The following interesting account of the Superior undertaking and its experience is reprinted from the January issue of the *Wisconsin Medical Journal*:

After contribution of over $3,000 in unpaid services by the members of the Douglas County Medical Society, and a contribution, to assist in defraying administration costs, of over $1,100 in cash by the State Medical Society of Wisconsin, the Douglas County Medical Society voted by ballot at its November meeting to discontinue its participation in the experimental voluntary sickness insurance plan of the Cooperative Health Association. The trial plan for prepaid sickness care which assured subscribers to the plan complete and unlimited medical care from their family physician through the payment of monthly dues varying from $1.50 to $2.90 per month had been in service operation for eighteen months. Prior to that time, the Cooperative Health Association had spent a number of months attempting to secure a sufficient number of subscribers (150) to permit initial operation of the plan.

The full-time manager and the executive committee of the Cooperative Health Association, after twenty-four months of intensive sales effort, were able to secure only 295 subscribers to the plan.

The Advisory Committee on Voluntary Sickness Insurance recommended to the House of Delegates that the experimental sickness insurance plans both in Milwaukee and Superior be discontinued at the termination of existing agreements. The House of Delegates, however, following an extended discussion of the plan by the Superior delegate, Dr. T. J. O'Leary, amended the committee's recommendation to provide that continuance or discontinuance of the plan should be governed by the wishes of the local county medical society affected. It is to be remembered that this plan for prepaid medical care is one which was designed by the Cooperative Health Association and subjected to a laboratory trial by the Douglas County Medical Society in order that the members of the local county medical society might assist the profession in Wisconsin in finding, if possible, a plan for the prepayment of medical care which was socially desirable, financially sound, and one which would be possible of enlargement in Wisconsin without incorporating the many inherent dangers invariably found in plans of this type and in the compulsory sickness insurance plans found in European countries. Neither the local county medical society nor the State Medical Society felt, after eighteen months of first-hand study, that this plan held any promise of filling these standards.

The sincerity and cooperation of the Douglas County Medical Society and the State Medical Society were complimented by the Cooperative Health Association through the chairman of its executive committee, Mr. Oscar Cooley, when he wrote to the cooperative societies as follows:

We wish to state also that our relations with the Wisconsin Medical Society and with the twenty-one doctors on our panel are of the very best. They are giving us their wholehearted cooperation. We regret to have to state this but the fact is that we have received better cooperation from the doctors than we have from the rank and file of consumers.

TWENTY-FIVE YEARS AGO

From the West Virginia Medical Journal for April, 1916.

Officers of the State Association: President, A. P. Butt, Davis; first vice president, G. C. Schoolfield, Charleston; second vice president, A. S. Bosworth, Elkins; third vice president, S. P. Lawson, Logan; secretary, J. Howard Anderson, Marytown; treasurer, H. G. Nicholson, Charleston; delegate to A. M. A., Frank LeMoyne Hupp, Wheeling; chairman of the Council, J. E. Rader, Huntington.

Councillors: First district, J. W. McDonald, Fairmont; H. R. Johnson, Fairmont. Second district, H. W. Daniels, Elkins; T. K. Oates, Martinsburg; third district, M. T. Morrison, Sutton; C. R. Ogden, Clarksburg; fourth district, J. E. Rader, Huntington; G. D. Jeffers, Parkersburg; fifth district, Wade H. St. Clair, Bluefield; E. F. Peters, Maybeury; sixth district, P. A. Haley, Charleston; B. B. Wheeler, McKendrie.

* * *

Monongalia County—The Monongalia County Medical Society met on January 4 with President Wylie in the chair. The following cases were reported: Dr. Maxwell reported a case of galloping consumption, of a bronchopneumonic type. Dr. Gibbons reported a case of a needle in the knee joint without history of trauma. Dr. Wylie reported a case of perforation of the lens with a piece of glass, which was located in the region of the iris, producing a pronounced cataractous appearance.

Aaron Arkin, Secretary.

* * *

McKendree Hospital has been equipped with a new electric plant, x-ray and other modern conveniences, which places this institution at the head of the class in Fayette county.

* * *

The West Virginia Department of Health is making a campaign against all persons not complying with the license laws who practice any form of the healing art, including chiropractics. Dr. J. H. Joslin, a Charleston chiropractor, was indicted in Kanawha county. Dr. S. L. Jepson, state health commissioner, went to Spencer, where he appeared before the Roane county grand jury for the purpose of giving testimony on which it is expected three other men will be indicted by the county grand jury.

* * *

Service to humanity is the savings bank of the ages. When the grim reaper calls the roll and our place in the ranks is vacant, the question of houses and lands, stocks and bonds and all other forms of material wealth sink into relatively small proportions beside that eternal legacy of service which we leave behind in the hearts of our fellow men.

—D. McN.

BOOK REVIEWS

Clinical Pellagra

CLINICAL PELLAGRA. By Seale Harris, M. D., Professor Emeritus of Medicine, University of Alabama, Birmingham, Alabama, assisted by Seale Harris, Jr., M. D., formerly Assistant Professor of Medicine, Vanderbilt University, Birmingham, Alabama. Cloth. Pp. 471, with illustrations. St. Louis: The C. V. Mosby Company, 1941.

This work represents a most complete treatise on the subject of pellagra. The conclusions are those of the author based on the work of all outstanding authorities in this field. Chapters are contributed by Ruffin and Smith of Duke, Sydenstricker of the University of Georgia, Sutton and Ashworth of Northwestern University, Porter and Higginbotham of Richmond and a chapter on the very much disregarded pellagra in children by Catherine Dodd of Nashville. The work of Goldberger, Sebrell, Spies and others is quoted freely. The foreword is by E. V. McCollum of Johns Hopkins. The book is arranged in sections which deal respectively with history and epidemiology, etiology and pathology, clinical investigation, symptomatology, diagnosis, prognosis, prophylaxis and treatment. The bibliography is based on five thousand references and is probably the most complete thing of its kind. The illustrations of skin lesions and the colored plates of tongue lesions in themselves justify the cost of the book.

Pellagra has too long been considered a disease of the impoverished southerner. Harris shows that it is prevalent all over the world. Pellagra is also too often considered merely a result of vitamin deficiency. Harris gives much consideration to the work of Sydenstricker, Spies, etc., which show that even beyond the vitamin deficiency liver and stomach disease may be of underlying importance. Through the work of the Northwestern investigators, Harris also calls attention to the fact that at least in some cases hormonal imbalance may be of etiologic or pathologic significance.

Woman's Auxiliary

Mrs. England Appointed

Mrs. Welch England, of Parkersburg, has been appointed by the executive board to the office of president-elect, succeeding Mrs. James S. Klumpp, of Huntington, who resigned in January.

Convention Reservations

Only a few more weeks and the members of the Woman's Auxiliary to the American Medical Association will be arriving in Cleveland for their annual convention, June 2-6. Have you made your reservations? If not, send your request, at once, to Dr. Edward F. Kieger, chairman of the Committee on Hotels and Housing, 1604 Terminal Tower Building, Cleveland.

Cabell County

The Woman's Auxiliary to the Cabell County Medical Society held their regular monthly meeting on February 10 at the home of Mrs. Oscar B. Biern, with Mrs. Van Metre, Mrs. James Brown, and Mrs. I. R. Harwood as co-hostesses.

Mrs. E. H. Humphreys, president, called the meeting to order and there were 40 members present. This was a social meeting. Plans were made for a Doctors' Day Luncheon to be held on March 10 at the Hotel Frederick.

MRS. A. G. RUTHERFORD, *Secretary*.

Fayette County

The Woman's Auxiliary to the Fayette County Medical Society met on February 24 at the Faymont Hotel, Montgomery, for a one o'clock luncheon. Mrs. George Fordham, president, presided. There were fourteen members present. Revision of the constitution and by-laws was considered.

MRS. R. A. UPDIKE, *Secretary*.

Kanawha County

The Woman's Auxiliary to the Kanawha Medical Society met on February 11 at the Charleston Woman's Club. Mrs. Ray Kessel, president, presided. Mrs. M. F. Petersen outlined plans for the annual meeting to be held at Charleston in May, and Mrs. W. A. Thornhill, Jr., gave a book review of Hans Zinsser's, "As I Remember Him." There were 45 members present.

MRS. CLAUDE B. SMITH, *Secretary*.

Logan County

The Logan County Auxiliary met on February 4 at the Rainbow Grill, Logan. Mrs. V. A. Deason, president, called the meeting to order and 12 members and one guest were present. Mrs. Honaker of Omar gave a book review. There was a collection for "Bundles for Britain" and some routine business was considered.

MRS. W. P. HAMILTON, *Secretary*.

Marion County

The Woman's Auxiliary to the Marion County Medical Society met on February 25 at the Fairmont Hotel, Fairmont. Mrs. E. D. Wise, vice president, presided. There were fifteen members and three guests in attendance. Mrs. George Evans, state legislative chairman, spoke on "Legislation of Interest to the Medical Profession."

MRS. J. W. DAVIS, *Secretary*.

McDowell County

The Woman's Auxiliary to the McDowell County Medical Society met on February 12 at the Appalachian Room, Welch. Mrs. C. B. Chapman presided and there were 17 members and two guests present. Mrs. E. O. Gates spoke on "Medical Legislation in West Virginia." Mrs. J. C. Hutchinson spoke on the *Auxiliary Bulletin*.

Plans for a "Doctors' Banquet" were made, to be held in March.

It was decided to pay the dues of the honorary members for this year only. The members planned to participate in the tuberculosis campaign, February 24 to March 3.

MRS. E. O. GATES, *Secretary*.

Parkersburg

The Woman's Auxiliary to the Academy of Medicine of Parkersburg, held their regular monthly meeting March 11 at the Chancellor Hotel. Mrs. H. A. Giltner, president, conducted the meeting and there were twenty members present. Mrs. Charles L. Goodhand gave a paper entitled, "Don't Believe It! Says the Doctor", which explained the superstitions and fallacies of medicine practiced by the layman.

The next meeting will be held April 8 at the Chancellor Hotel.

MRS. C. L. GOODHAND, *Secretary*.

Raleigh County

The Woman's Auxiliary to the Raleigh County Medical Society met on February 17 for a luncheon at the Beckley Hotel. Mrs. E. Newton DuPuy, president, called the meeting to order. There were 13 members and three guests present. Mr. Joe W. Savage, executive secretary of the State Medical Association, addressed the group on "Medical Legislation."

Dr. E. Newton DuPuy and Dr. Clark Kessel, president and secretary, respectively, of the Raleigh County Medical Society, were present.

On March 17, the Raleigh County Auxiliary held a luncheon meeting at which fourteen members and three guests were present. Mr. Edmund P. Wells, acting executive secretary to the West Virginia Tuberculosis and Health Association, was guest speaker. Mr. Wells spoke on "Tuberculosis" and Dr. G. C. Hedrick, chairman of the Raleigh County Tuberculosis Association, also spoke.

A nominating committee was appointed. Donations were made to the local Girl and Boy Scout organizations.

Mrs. D. C. Ashton read the revisions of the proposed constitution and by-laws, all of which were discussed, voted upon, and adopted.

The next meeting will be held April 21.

MRS. H. A. SHAFFER, *Secretary*.

Blowflies Dangerous to Man

While there are no true poisons emitted by blowflies or contained in their bodies, such flies may carry organisms to human beings which may cause digestive disturbances or the onset of diseases such as dysentery or typhoid, *The Journal of the American Medical Association* for March 1 says in answer to inquiries about the possible ill effects from swallowing flies.

"Blowflies breed in decaying animal matter and feed on various types of organic debris," *The Journal* explains. "They are, therefore, more or less laden with germs of various kinds.

"There are instances in which blowflies have been swallowed without producing any ill effects. P. F. Fattig, of Emory University, reports having twenty-five different people drink carbonated water in which from one to several green bottle flies had been soaked for several days. No ill effects were observed by any of these persons."

Cook County Graduate School of Medicine

(In Affiliation with COOK COUNTY HOSPITAL)

Incorporated Not For Profit

ANNOUNCES CONTINUOUS COURSES

SURGERY—Two Weeks Intensive Course in Surgical Technique with practice on living tissue, starting every two weeks. General Courses One, Two, Three and Six Months; Clinical Courses; Special Courses. Rectal Surgery every week.

MEDICINE—Two Weeks Intensive Course starting June 2nd. One Month Course in Electrocardiography and Heart Disease every month, except August and December.

FRACTURES & TRAUMATIC SURGERY—Two Weeks Intensive Course starting May 19th and June 30th. Informal Course every week.

GYNECOLOGY—Two Weeks Intensive Course starting June 16th. Clinical Diagnostic and Didactic Course every week.

OBSTETRICS—Two Weeks Intensive Course starting April 21st. Three Weeks Personal Course starting May 26th. Informal Course every week.

OTOLARYNGOLOGY—Two Weeks Intensive Course starting April 7th. Informal and Personal Courses every week.

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COMMUNICATIONS

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March 6, 1941.

My Dear Mr. Savage:

Kindly accept my deepest appreciation for the West Virginia Medical Association card for 1941.

I arrived down here about a week ago and am having a most enjoyable experience, attending beach and tavern parties. An ideal vacation for a coal mine doctor. The buildings and hospital at the camp will not be completed before April 15, 1941. At present our duty time is taken up by a course of instruction, mostly lectures, on the Army Medical Service. Our instructor, Captain Joseph Russell, Regular Army Medical Corps, is taking a lot of pains to refresh the minds of the old heads and to acquaint the novices with the methods of the Army Medical Corps.

The other members of the West Virginia Area, Drs. Gray, Dunman, and Perilman, seem to be having a very nice time and enjoying life as well as the writer.

In passing I might mention that we will have a permanent camp comprising around 900 artillery officers and about 20,000 enlisted men. The hospital will accommodate eight hundred bed patients, modernly equipped and ready to function by April 15.

According to orders we will be back in West Virginia February 16, 1942.

Regards to all,

Sincerely yours,
Gilbert O. Crank.

Blood Bank Donors

Only those persons who have been born in this country and who have never lived in districts where malaria is prevalent should be used as donors for blood banks, E. F. Gorden, M.D., Yonkers, N. Y., advises in *The Journal of the A.M.A.* for March 22. He says that such a policy will minimize the possibility of spreading the disease from man to man.

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1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph. Gon. & Ven. Dis., 23, 201 (March) 1939.

*Silver Picrate, is a definite crystalline compound of silver and picric acid. It is available in the form of crystals and soluble trituration for the preparation of solutions, suppositories, water-soluble jelly, and powder for vaginal insufflation.

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Neighbor Journals

Doctors and Debtors

The average run of citizens who take automobiles to a garage for overhauling or repairs does not expect to recover his property until he has paid the mechanic's bill. How different is his attitude towards the doctors indebtedness?

The doctor is mechanician, engineer and all around repair man for the ailing human frame. Yet he rarely gets paid when his work is done.

According to an editorial some time ago in *America* the Metropolitan Life Insurance Company made an interesting survey among its millions of policyholders. The survey reports that the average annual payment for the average family to its physician was $140.00. Only the doctor himself knows when and after what delays this sum was finally paid to him.

The commentator says wisely:

"Now the cost of repairing the human machine engenders one of the most interesting problems of the day. It is a most important factor in the family budget. From very many parts of the country the report has come that, after the bill for medical services has been rendered, the family physician, who floated into the house with healing upon his angelic wings, assumes the menacing part of a Shylock.

"That medical, hospital, and surgical fees do impose a terrific burden upon some families is beyond all question. To many a man working for a salary, the physician's order to go to a hospital for an operation, is worse than a decree in bankruptcy. It means, in many instances, the loss of his job, and a period in which bills pile up so high that he must work for the rest of his life to pay them.

"This fact is recognized by the profession. For several years medical, surgical and hospital committees have been surveying the field, and as they are animated by an honest purpose, we can rely upon an accurate and intelligent diagnosis of a very serious social problem. But it has already become apparent that the reason of many a heavy hospital bill is the fact that the patient and his family have demanded unnecessary, and even luxurious, accommodations and special service. Even when they are

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sick, some people never lose their ambition to keep up with the family of Jones.

"One aspect of this problem should not be lost sight of. If some physicians demand, and collect, exorbitant fees, others never receive the modest fees which they ask. Every profession has its list of non-paying clients, but the physicians probably have the longest catalogue. Men who have been snatched from what Mr. Toots would designate that the Cold and Silent Tomb, are so jubilant that they are quite unable to think of anything so prosaic as a bill for professional services rendered. Besides, now that the crisis is safely passed, they are too busy arranging a trip to Europe.

"Most families have a tale of the Exorbitant Physician. There is such a creature. But there is also the physician who comes home tired out after a long day, to wonder where he can scrape enough money together to meet his office rent. In his behalf, we would urge the obligation, sanctioned by all law, human and Divine, to pay one's debts as promptly as possible."—*Illinois Medical Journal.*

Science Through 1940

Another year has ended and attempts are being made to balance the scientific ledger to see just what gains have been made in the various fields of concentration.

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More information on it has come this year. New elements have been discovered, elements 85, 87, 93 and 94. New knowledge concerning the isotopes of sulphur give promise of a better understanding of the part it plays in metabolism.

During the year the Rockefeller Foundation granted more than one million dollars to the construction of the world's largest cyclotron designed to produce energies of more than one hundred million volts. A record high pressure of three million pounds per square inch was obtained by workers at the Carnegie Institute in Washington.

Astronomers discovered four new comets, and astro-physicists calculated that Ras Algethi, not Antares, is the largest star known to man.

Petroleum products, oil, coke and coal, were made from grass, seaweed, cornstalks and cotton. Starch, hitherto believed to be exclusively the result of a biologic process in plants, was synthesized from glucose. New work was done with colchicine, a chemical mysteriously capable of influencing the size of fruits and flowers. A new zoological apparition, the kouprey, a wild ox, was discovered in Indo-China.

In the field of medicine, work on pituitary hormones has advanced, while thialin, and pantothentic acid have been synthesized. A new vitamin has been discovered in milk capable of preventing stomach ulcers in guinea pigs. Riboflavin has been related to the keratitis of infancy and vitamin E has been shown to influence muscle weakness. As an outgrowth of the war, blood plasma in liquid form, capable of being preserved from two to three years at ice box temperature, and not requiring typing, has been shown to be useful as transfusing fluid, and the possibility of the use of dried plasma has been definitely established.

Work on the virus diseases has gone forward apace. The new Rockefeller vaccine against in-

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fluenza is still in the experimental stage, however, and the baffling fact remains that there are hundreds of different types of the virus, each capable of producing the disease. It is possible that we may be nearer a poliomyelitis vaccine in the development of a brain suspension of mice infected with virus of monkey origin which had previously been passed through rats. Experiments with vaccinations against measles also offer promise.

The work in cancer leaves the etiologic riddle still unsolved, although such experiments as the production of sarcomas in mice by extracts of livers of persons who died of cancer show that activity in this field of research is still intense.

Other achievements of the year remain to be noted such as bone marrow transfusion in leukemia and aplastic anemia, the treatment of wounds with plaster of Paris dressings and the apparent demonstration that phytin and inositol are capable of restoring hair to bald rats and that this substance may be recovered from the liver. — *Virginia Medical Monthly.*

Characteristics of Quacks

One of the characteristics of the quack in the field of medicine is his attempt to camouflage his ignorance by quoting the writings of reputable physicians and trying to make it appear that his work and that of the ethical physician is one and the same thing, Richard B. Phillips, M.D., Rochester, Minn., points out in the March issue of *Hygeia, The Health Magazine.*

Other characteristics by which the quack may be identified are summarized by Dr. Phillips as follows: "The quack lets every one know that he is in town by large letter advertising in newspapers, circulars, etc. Although he is quick to criticize organized and ethical medicine, he adopts the dress, office equipment and titles of the profession in so far as he is able. He hands out literature which is ostensibly scientific, and attempts to confuse and bewilder the 'sucker' with pseudoscientific statements. He presents, as a method of cure, something which is easy and simple to take, and surrounds this nostrum with an aura of magic and mystery."

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While there is no established therapeutic indication for vitamin E, experimental use indicates possible value in habitual and threatened abortion and in certain muscular dystrophies which may or may not include amyotrophic lateral sclerosis, progressive muscular dystrophy and muscular atrophy.

In the management of habitual abortion due to vitamin E deficiency, it is suggested that one to three capsules tocopherex daily be used, continued through eight and one-half calendar months of pregnancy. For threatened abortion, six capsules within 24 hours is suggested, possibly continued for one or two weeks—with a return thereafter to the maintenance dosage.

For experimental use in muscular dystrophies, a dosage of three capsules two times daily is suggested, combined with generous amounts of a vitamin B complex concentrate.

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Mead Johnson

The baby's first solid food always excites the parent's interest. Will he cry? Will he spit it up? Will he try to swallow the spoon? Far more important than the child's reactions is the fact that figuratively and physiologically, the little fellow is just beginning to eat like a man.

It is a fortunate provision of nature that at the time the infant is ready to receive the nutritional

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benefits of cereal, his taste is unspoiled by sweets, pastry, condiments, tobacco, alcohol and other things to which adult palates and constitutions have become conditioned.

Many a parent, with limited knowledge of nutrition, attempts to do the baby's tasteing for him. Partial to sweets, the mother sweetens her child's cereal. Disliking cod liver oil, she wrinkles her nose and sighs: "Poor child, to have to take such awful stuff!" The child is quick to learn by example, and soon may become poor indeed—in nutrition, as well as in mental habits and psychological adjustment.

Appreciating the importance and difficulties of the physician's problem in establishing and maintaining good eating habits, Mead Johnson & Company continue to supply pablum in its natural form. No sugar is added. There is no corresponding dilution of the present protein, mineral and vitamin content of pablum. Is this not worth while?

TUBERCULOSIS ABSTRACTS

(Continued from page 179)

stereoscopic and single chest roentgenograms. The auxiliary equipment for making single films is less complicated and bulky. Apparatus has been constructed which can be carried in a truck and assembled to examine groups. One film (unexposed —$0.75) is required for each examination. Advantages of this method are (1) high contrast, (2) small unsharpness of shadow borders, and (3) convenient size for viewing. (Fig. 1)

Rolls of Paper 14 by 17 Inch: Rolls of paper 14 inches wide and about 150 feet long coated on one side with a photographic emulsion are used for this method which was devised specifically for surveys. A roll of paper is mounted within a light-tight mechanism which is arranged so that, after the first roentgenogram is made near one end, the paper can be moved about 18 inches in preparation for the second exposure. After 100 exposures are made, the roll is removed and processed in special equipment. The roentgenograms are viewed by reflected light in a viewing device in which the roll of paper can be mounted. The x-ray apparatus and technique for paper are practically equivalent to those used for 14 by 17 inch film, though slightly more exposure is required for paper. The contrast in paper is less than in film although the diagnostic value appears not to be seriously compromised by

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this deficiency. Apparatus is transportable in a truck, rate of exposure is high (100 per hour), and examination of the roentgenogram is quick and convenient. The company which has developed this method supplies all apparatus, and delivers completed roentgenograms to the physician for $0.75 to $1.00 per patient. (Fig. 2)

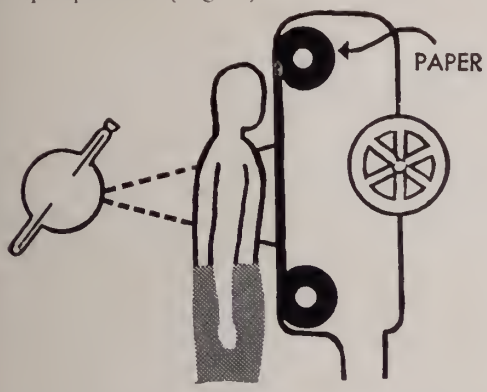

Fig. 2

Photofluorograms: In these methods, x-rays pass from the tube through the patient to a (14 by 17 inch) fluorescent screen which is thus caused to emit light. A photographic camera is focused upon the fluorescent screen in order to record the pattern of areas of varying brightness of light produced on the screen by x-rays. The screen, lens, and photographic film must be as fast as possible in order not to require excessive x-ray exposure. High voltage generating equipment like that used for 14 by 17 inch film is required for photofluorography. Using screens and cameras now available, the unsharpness or blurring of shadow borders is greater in photofluorograms than in 14 by 17 inch roentgenograms.

The lens used to make four by five inch photofluorograms is expensive ($1,000). The four by five inch film is large enough to view without magnification. These films can be processed more conveniently than 14 by 17 inch film; the cost (one processed film, $0.06) and filing space are far less for the small (4" x 5") film. Four inch film in rolls is not available.

The lens generally used to make 35 mm. photofluorograms is an f:1.5 lens of the type used in miniature cameras. The 35 mm. photofluorogram must be enlarged for clear viewing. Rolls of film can be exposed and processed by means of easily available photographic equipment; the cost (for each processed film, $0.02) of film for each exposure is of course very small.

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These methods are being studied in order to find means of overcoming the low contrast and gross unsharpness which are their chief disadvantages. (Fig. 3)

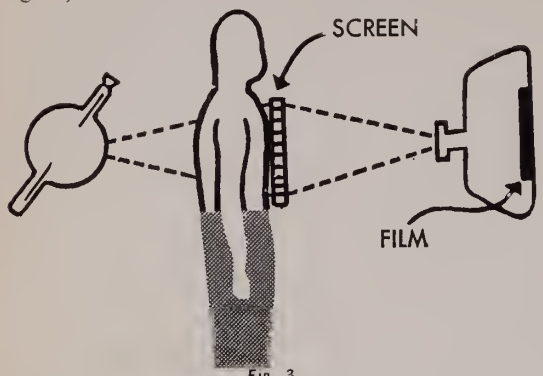

Fig. 3

Fluoroscopy: Apparatus for fluoroscopy is relatively inexpensive ($800) and it requires a relatively low power input (10 volts, 10 amperes alternating current). The physician examines the fluorescent image of the chest in a darkened room and records his opinion. Thus there is no permanent record which can be reexamined by others. The contrast and sharpness of the fluoroscopic image are greatly inferior to those of a good 14 inch by 17 inch roentgenogram. The physician is subjected to scattered x-rays during the examination. This may be dangerous in a mass survey. (Fig. 4)

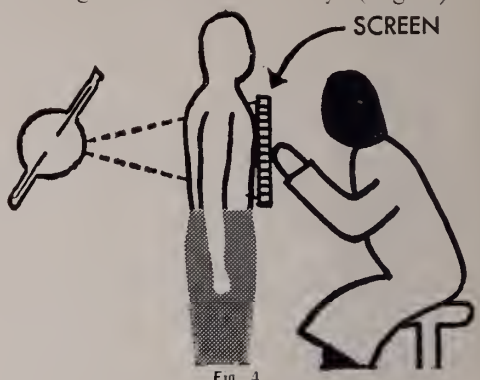

Fig. 4

No x-ray survey method is an adequate substitute for a complete x-ray examination of the chest. The purpose of a survey is to segregate as accurately as possible those subjects whose chests are normal and those subjects who should be referred to a roentgenologist for a complete examination because of suspicious shadows seen by the physician who conducts the survey.

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Vol. XXXVII May, 1941 No. 5

TECHNIQUE OF BLOOD GROUPING AND CROSS MATCHING*

By E. E. MYERS, M. D. and E. E. BEOHM, A. B.
Philippi, West Virginia

THE importance of the careful and accurate selection of compatible donors for blood transfusion has been increasingly recognized since the discovery of the four blood groups by Landsteiner in 1900, but the various systems of nomenclature and different techniques for typing and cross matching have caused considerable confusion and the use of a wide variation of methods in hospitals. Since standard textbooks do not give sufficient or practical directions for performing these tests, it appears that there is need for a correlation of the work of the various investigators, a simplification and standardization of technique of blood typing and cross matching, and it is to this end that this paper is directed.

THE AUTHORS

Dr. Myers, graduate University of Pennsylvania, 1932; resident, Laboratory Medicine, University of Pennsylvania Hospital; Clinical Pathologist, Director Research Laboratory, Myers Clinic.

Mr. E. E. Beohm, A. B., Laboratory Assistant, Myers Clinic, Philippi.

NOMENCLATURE AND CLASSIFICATION

The international nomenclature is undoubtedly the logical method of designating the blood groups, as it is not an arbitrary system but is based upon the actual agglutinogen content of the blood; however, since the Moss classification is so widely used, the transition to the international nomenclature can best be made and confusion eliminated by combining the two, as: AII, BIII, ABI, and OIV.

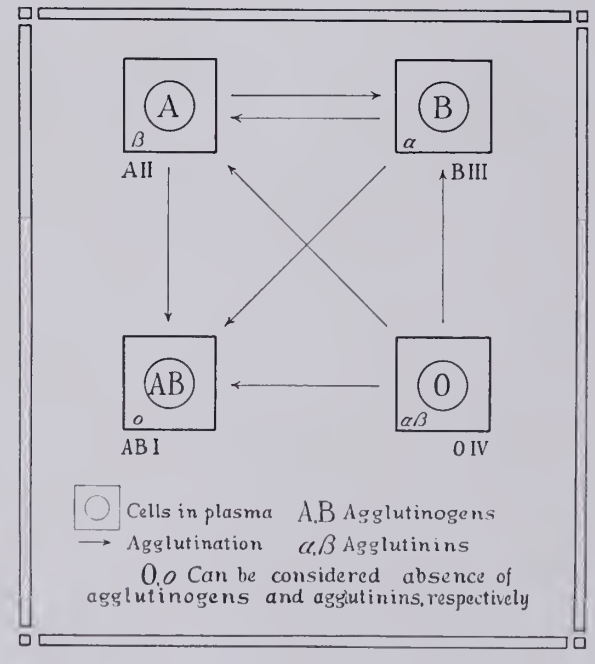
That all persons (with certain exceptions) fall into four blood groups is accounted for by the assumption of the presence or absence of two isoagglutinins in the plasma and two corresponding isoagglutinogens in the corpuscles, these elements being reciprocal, transmitted as allelomorphs, and reacting with members of other groups as illustrated by the diagram shown on the following page.

In typing, the use of stock sera of high potency is obviously the prime consideration. The most convenient source of sera is from

*From the laboratory of the Myers Clinic.

the personnel of the hospital, volunteer or professional donors. Commercial sera in many instances has been found to be of low titer and so if used should be checked carefully. The personnel of the hospital should be grouped, so that known types are available for testing typing sera when necessary. Blood for typing purposes should be taken from fasting subjects because fats, etc., may precipitate from cloudy serum, causing loss of potency.

Before blood is obtained for use as typing serum, a few c.c. may be taken from the prospective subject and the agglutinating power of the serum compared with that of the stock serum by mixing with sensitive corpuscles as in routine typing and also in dilution. For testing AII serum a 1:20 dilution on an open slide should produce agglutination within a few minutes. This is prepared



by mixing one drop of serum 1:10 (one drop serum and nine drops saline) with one drop of a 2.5 per cent sensitive cell suspension (one drop blood in about one c.c. saline). For testing BIII serum a 1:40 dilution is used. This higher dilution is necessary because the subgroup A^2 corpuscle is relatively insensitive. These two tests should be sufficient guides to the titer and practical use in routine typing. However, it is desirable to know the exact titer of the grouping sera, which should be at least 1:64 and this may be determined by the technique described below under titration for OIV donor.

The serum should not cause hemolysis, as this may mask agglutination. Several days in the ice box will eliminate the hemolysin factor which is said to be present in about 25 per cent of sera.

KEEPING THE SERUM

Serum should be kept sterile and is most conveniently stored in test tubes with rubber stoppers. If desired, the BIII serum can be colored by adding a small drop of methylene blue stain to each 10 c.c. of serum. Although tending gradually to lose its agglutinating power, serum retains its agglutinating properties for long periods, even several years, if it is kept cold and free from contamination. It is advisable, however, to keep it no longer than a few months in routine work, and it should always be tested on blood of persons of known types AII and BIII (or if no BIII is available, ABI may be substituted for this group) if there is any question as to its potency. Bacterial contamination may cause either loss of agglutinating power or, with certain bacteria, false agglutination.

Ordinarily the types AII and BIII sera are entirely adequate for grouping tests. Some hospitals employ OIV serum in routine typing, but the value of this does not seem to justify the extra work. It is true that OIV serum is usually of higher titer and may alone produce agglutination and thus indicate that one of the other typing sera is of insufficient potency, but where agglutination occurs in either the type AII or BIII serum, the OIV automatically ceases to be of use; that is to say, it does not help to distinguish between AII, BIII, and ABI. In fact, it may tend to cause error by influencing one not to wait long enough or to study the third mixture closely enough, owing to the operation of the convincing two against one idea. It would be better to concentrate on keeping the quality of the other typing sera at a high level than

to spend time and effort in the use of something of doubtful value.

The practice of some laboratories of not doing typing but only cross matching before transfusion is to be severely condemned, as blood grouping is equally as important as is matching. Typing is especially important in infants, as agglutinins may be weak or absent at birth; in fact, maternal agglutinins may be present, not developing until one to two years of age. Hence, typing may show the proper blood group where a weak agglutinating reaction might be missed in the cross matching.

RETYPING NECESSARY

It is emphasized here that no report of grouping from another laboratory should be accepted; the patient and or donor should always be retyped. If this rule is followed, errors due to differences in nomenclature, as well as other pitfalls will be avoided.

Typing serum for use is most conveniently kept in small sterile test tubes stoppered with one hole rubber stoppers, through which pass glass pipettes with rubber bulbs. It is convenient to have a box containing all materials used in typing. The equipment employed in typing and cross matching is shown in the accompanying photograph.

The simplest, most practical and at the same time sufficiently accurate method for typing is the following:

Stick the patient's finger. Touch a thoroughly clean, dry glass slide to the blood so that two medium sized drops are obtained, one on either end of the glass slide. Let fall one drop of type AII serum on the left and one drop of type BIII on the right. Stir the blood and serum into a homogeneous mixture with the clean end of a wooden applicator stick. The mixtures should be stirred until they are each about the size of a dime, as agglutination seems to take place more rapidly when the cells and serum are spread over a fairly large surface. The slide is tilted back and forth and from end to end at frequent intervals. Tapping against the end of the slide with the fingernail produces an agitation of the mixtures which favors agglutination. If a number of typings are done at the same time, the name of the subject should be written on a sheet of paper as each test is done and the slide placed on the name. Several typings can be done, to be read after the appropriate lapse of time. If the slides are placed in order, picked up one at a time for examination, held in the same position, and replaced on the names, there is no necessity of wax pencil markings on the slides. With type AII always on the left, type BIII always on the right, marking on the slide serves no useful purpose. To prevent rapid drying, the slide may be placed on a wet towel or paper and covered with a Petri dish cover.

Time is a most important factor in typing, as it also is in cross matching, and the final readings must not be made until at least 15 (longer for infants) minutes have elapsed. A time clock should be used. When the slide is tilted and the suspension as it flows to the lower edge of the slide is viewed against a light at close distance, glistening is an indication of the fineness of the particles; and, if glistening occurs within two feet of the light source, one may be practically certain that there is no agglutination present. Rouleaux formation must at times be distinguished from agglutination. A small drop of a lecithin suspension in saline (vide infra) will break up rouleaux but not agglutination, and is at times very helpful. The microscope is usually not necessary in this method of typing;

when employed, if the microscope stage is tilted slightly, the mixture thins out at the upper side so that a thinner film is obtained for examination.

It should be remembered that agglutination is, to a certain extent at least, a quantitative reaction, and the technique is not good until the same color of mixtures can be obtained each time by getting approximately the same amounts of cells and sera together. The color should be a light pink—not red and not pale. Oxalated or citrated blood may be used for typing or cells from a clot are satisfactory. Cells more than 24 hours old should not be used, since there is loss of agglutinating sensitivity on standing, or by bacterial action the cells may become panagglutinable.

The greatest care and attention to detail should be exercised in blood grouping, as it should be considered equivalent in importance to cross matching. If the group is correct, cross matching can hope only to pick up subgroups and rare agglutinating phenomena and perhaps hemolysis. A death from a reaction to transfusion using a donor of the same group has rarely been reported. It cannot be too strongly emphasized that high potency serum and sufficient time are the important factors in avoiding mistakes in blood grouping.

TECHNIQUE OF CROSS MATCHING

There are many methods in use for cross matching. The ideal method would seem to be one employing test tubes, because conditions are more favorable for agglutination, hemolysis can be detected, and more material is present with which to work. The following are the essential steps in a satisfactory cross matching technique:

Blood specimens are obtained from the veins of the donor and recipient. Although enough blood may be obtained from the cross itself by sticking the finger, in the case of the donor enough has to be obtained for syphilis serologic tests, and frequently other tests are ordered on the patient, for which blood can be obtained at the same time. Furthermore, it is usually much easier and quicker to obtain blood from the vein. For the cross matching itself about one and one-half c.c. of blood is sufficient. From the needle are dropped two to three drops (more in anemia) in a test tube (about 75 x 12 mm.) containing two to three c.c. of physiological saline, to make about a 2.5 per cent cell suspension. The tube is shaken immediately to prevent clotting. About one c.c. of blood is placed in a small (fermentation) tube thirty-five by seven mm. which contains dry potassium oxalate. These tubes are prepared by pipetting into each .5 c.c. of one per cent potassium oxalate solution and drying in an oven. In this preparation the temperature must not exceed 110° C., else the potassium oxalate may be damaged.

OXALATED BLOOD

The test tube is stoppered and the oxalate and blood mixed by inverting a few times. The advantages of using oxalated blood are that retyping can be done and plasma can be obtained more quickly than serum.

The tubes can be kept identified by placing them at once into a blood crossing block.[1] The plasma is separated by centrifuging. Holders for these small tubes can be made by boring holes part way through large corks which fit in the tops of the centrifuge cups. To balance the centrifuge cups, the corks with the tubes can be placed on scales beside the cups while water is poured into the cups to balance. Of course the plasma would be separated in a short time without centrifuging. During all manipulation with these tubes it is necessary to mark only one, preferably the recipient's tube, to be marked with an "R" or "Pt." One pipette is used for each side of the cross. These pipettes are made from glass tubing pulled out and with small rubber bulbs on the ends. They should be boiled, cleaned, and dried since last being used. If not boiled, they may contain serum which may interfere with the tests.

A pipette is used to transfer two or three drops of the recipient's plasma or serum to a small tube size thirty-five by seven mm., and

then after rinsing with the cell suspension of the same blood, three drops of the cell suspension are transferred to the other tube of the cross. Another pipette is then used similarly to transfer the donor's plasma and cell suspension to the appropriate tubes. This gives a dilution of serum approximately 1:3, which would theoretically avoid the prozone phenomenon. The tubes are shaken, a procedure most easily done by flipping against the end of the forefinger, allowed to stand for 10 minutes by the clock, then centrifuged at about 2,000 revolutions per minute for three minutes, shaken up again, and allowed to stand for 10 more minutes.

The tubes are examined for hemolysis and, after again shaking thoroughly, a drop from each is put on a slide. This is easily accomplished without a pipette by making the tube almost horizontal and tapping it against the slide. The drops are covered with cover glasses and examined under low and, if suspicious, under high power of the microscope. Any clumping except rouleaux is regarded as agglutination. If all clumps have rouleaux formation protruding from them, it can be considered that the agglomeration is due to rouleaux effect; and, if the clumps disappear after adding a small drop of lecithin suspension to the tube, it can be concluded to be due to the rouleaux phenomenon. Lecithin is not supposed to have any effect on true agglutination. A suspension of this can be made in a test tube by mashing and stirring to a milky appearance with an applicator stick a small piece of lecithin in about one c.c. of saline. The left side of the cross, i.e., that containing RS + DC, is more important than the right, because after the transfusion the cells of the donor will be submitted to full agglutinating power of the patient's plasma. It, therefore, should be watched more closely.

If the cross matching is satisfactory the report is given as follows:

RS + DC = O.K.
DS + RC = O.K.

In an emergency, reading may be done after a few minutes and the report given, stating that the cross has not stood the standard time. It does not seem to be worked out as to the exact time necessary for agglutination to occur, but it is certain that time is here again a most important factor. Any technique, even with centrifuging, which employs only five minutes is going to miss some weak agglutination. Centrifugation only serves to bring the cells together; it probably does not hasten the agglutinating reaction.

The purpose of the cross match is to check on the blood grouping, to pick up subgroups, and to discover various peculiar agglutinating reactions, such as are said to occur in pneumonia, etc., and those due to minor agglutinins. Subgroups occur in types AII and ABI. The importance of cross matching should be considered only equal to that of the blood typing. If there is any doubt or question concerning compatibility, the donor should not be used.

PURPOSE OF CROSS MATCHING

Reactions apparently occur in a certain percentage of cases where the cross matching shows absence of agglutination. Aside from reactions attributed to rubber tubing, certain of them are supposedly due to allergy, and others to unrecognized causes. It may be that skin tests of the recipient with the donor's serum will help to indicate the possibility of certain reactions. (Unpublished work in progress by authors).

Hemolysis should be looked for by noting the color of the supernatant fluid after centrifuging and also by observing the relative number of cells during microscopic examination. The role of hemolysins in transfusion reactions has not been definitely ascertained, but it is likely that hemolysis is responsible in a large measure for all fatal reactions following the use of a donor of another group.

The use of OIV ("universal") donors for other groups has been a common practice of many hospitals, and only occasionally have there been severe reactions and rarely fatalities reported. If an OIV donor is used for another group, the cross matching needs to be done only with the patient's serum against

the donor's cells, because it is obvious that the donor's serum will agglutinate the patient's cells. A titer determination should be run with the donor's serum against the patient's cells, as it has been recommended that the "universal" donor not be used if the titer is higher than 16, because this will be the approximate dilution of the donor's plasma in the patient's blood (500 c.c. being used). However, it is rare to find an OIV donor whose titer is less than 32, and usually it is much higher. From the number of "universal" donors which have been used with no reactions, it is apparent that there is another factor besides agglutination which is responsible for reactions; (or it is possible that the agglutinins are absorbed by the somatic cells). We have seen a patient receive two transfusions of 500 c.c. each on consecutive days, the donor's serum showing a titer of 2024 against the patient's cells, with no sign of any reaction! It is probable that here again the presence of hemolysins is the most important factor and it is advised that the donor not be used if hemolysis is present in the titer analysis.

TECHNIQUE

Technique for this titration is as follows: Set up a row of ten small test tubes in each of which pipette .2 c.c. of physiological saline. Add to the first tube .2 c.c. of serum. Mix well by drawing it up in a graduated one c.c. pipette a few times and then transfer .2 c.c. to the second tube and mix; .2 c.c. of this serum well mixed is transferred to the third tube, and so on, discarding .2 c.c. from the last tube. A serial dilution of serum is thus made 1:2, 1:4, 1:8, 1:16, etc. To each of these tubes add .2 c.c. of 2.5 per cent recipient cell suspension. This will then make the dilutions 1:4, 1:8, 1:16, 1:32, etc. Shake the mixtures and allow to stand at room temperature for two hours. After examining for hemolysis, shake again and read agglutination with the naked eye. Drops from the tubes beyond those showing visible clumps should be examined under the microscope. The reciprocal of the highest dilution in which agglutination distinctly occurs is given as the titer of the serum; e.g., if agglutination does not occur beyond the 1:64 dilution the titer is 64.

Cold agglutination and so-called autoagglutination, although mainly of theoretical interest, sometime cause trouble in cross matching; that is to say, the patient's blood may agglutinate members of the same group. Factors involved are classified under minor agglutinins and are thought to be responsible at times for reaction following transfusion. This type of agglutination is not supposed to occur at body temperature; so, if this is suspected, the tubes may be placed in an incubator for a short time and again examined. If the agglutination clears up, the phenomenon can usually be attributed to cold agglutinins. It should be remembered, however, that temperature has a rather marked effect upon true agglutination and that at 37° C. a weak true agglutination may be broken up.

CONCLUSIONS

The importance of giving enough time for reactions to occur in grouping and cross matching has not been stressed sufficiently. Again it is emphasized that the two most important factors in blood grouping are the allowance of adequate time for the reaction to take place and the use of testing sera of high potency.

The place of hemolysins in transfusion has not been definitely determined, and not enough attention has been given this problem. A newer application of the caution advised regarding hemolysis may prove of importance in plasma transfusions where the same principles are met as in the use of the OIV donor. The explanation of the fact that thousands of plasma transfusions have been reported without severe reactions would appear to be logically explained in the fact that almost all of these have been with blood that has been stored for a few days or longer at low temperature, which would cause disappearance of the hemolysins.

Blood grouping and cross matching should be considered of equal importance; both

should always be done and one used as a check on the other.

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CYCLIC DISCOMFORT OR DYSMENORRHEA*

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DYSMENORRHEA (menorrhalgia) is usually defined as painful or difficult menstruation. It is also sometimes called pain or cramps at the menstrual time, and may be accompanied by headache, backache, legache, or nervousness.

A more correct and complete definition would be discomfort associated with the menstrual cycle, one of many possible symptoms which may predominate. The symptoms which may be found are:

Headache, backache, legache, cramps, weakness, nausea (and vomiting), nervousness (jittery, "weepy"), tension (premenstrual tension), body pains (generalized), lassitude, bowels (diarrhea or constipation), skin, fatigue, lack of concentration.

With this in mind the word "dysmenorrhea" could better be used as an adjective rather than as a noun and the disturbance be defined as dysmenorrheal legache, headache, backache, etc.

All of these are disabling or discomforting symptoms associated with the menstrual cycle and correction may be expected by directing attention to pelvic organs or the endocrine system.

The physician's duty is not completely discharged when he simply asks, "do you have cramps at your menstrual time." The correct answer to this may be "no", but it does not mean that she is completely free from distress at certain monthly intervals. The patient will be grateful for relief from the various manifestations of cyclic discomfort.

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Various investigators have reported the incidence of menstrual discomfort. Some have said that 90 per cent of the women have some form of discomfort with 50 to 65 per cent suffering to such an extent that it interferes with the daily routine at this time. Goldwasser in 1938 reported an investigation of 1,606 girls attending high school in four localities around Los Angeles and found that 10.5 per cent were unable to attend school during the menstrual time or were interrupted in their routine by requiring rest. A few of the investigators with their respective percentages may be cited: Jacobi, 46 per cent; Nuller, 47 per cent; Cullings, 60 per cent; Blair Bell, sixty-two and one-half per cent; Jeff Nuller, 90 per cent, and Brown, 22 per cent (six per cent disabling).

Menstruation is a physiological function which should occur painlessly.

TERMINOLOGY

In order to understand the scope and general attitude to the approach to the subject of dysmenorrhea, a number of the terms and definitions often used in connection with this condition are being listed. 1. Congestive (plethoric), accompanied by great congestion of uterus; inflammatory, comes from or due to inflammation; mechanical or obstructive, due to mechanical interference to flow as from clots, flexion of uterus, or stenosis of cervix;

membranous, characterized by exfoliations from the uterus; ovarian, due to ovarian disease (endometriosis, chocolate cyst or other tumors); spasmodic, due to spasmodic contraction of uterus; tubal, due to inflammation; uterine, from uterine disorder. This terminology does not constitute a complete approach to the subject but it is wise to consider at times the terms used.

CLASSIFICATION

The most widely used classification of dysmenorrhea and perhaps the most satisfactory is the division into primary and secondary.

Primary (also called essential, functional, intrinsic), is the term used when no demonstrable pathology can be found. Years hence, some of the cases now presented under this terminology, will be removed because of finer and more exacting methods of diagnosis and investigation. Primary dysmenorrhea starts with puberty. Some have suggested subdividing the primary into obstructive (cervix long, conical, with small os) and congestive. But would this first not be a demonstrable cause?

Secondary dysmenorrhea (also called acquired) is the term applied when definite pathology can be shown; this includes tubular infection, ovarian tumor, uterine fibroid, uterine displacement and endometriosis. It is with the first group, the primary, that this paper is chiefly concerned.

There are so many and such varied theories about the cause of dysmenorrhea that it is sometimes called a disease of theories. A few of these are listed. The factors in these theories are somewhat overlapping and various others have elements which are interrelated, but as a working basis the following are presented:

1. Backing up of Blood: This has long been considered a cause for pain but the fact that a probe can easily be passed into the uterus through the cervix, seems to be against the theory that actual obstruction causes the pain.

2. Premenstrual Endometrial Congestion: According to this theory the extreme thickening of the uterus narrows the os to such an extent that easy flow of blood is prevented.

3. Anteflexion: The fact that this position is so often associated with painful menstruation brings this up as a theory, but all anteflexions are not accompanied by dysmenorrhea. Anteflexion is often associated with retrocession which usually indicates poor muscular tone and support. Sterility with infantile, hypoplastic type of uterus, with long conical cervix, and small stenosed os are also conditions which are frequently found associated with the anteflexed uterus.

4. "Stretching Pains" (Schultz): According to this theory, the connective tissue has not been replaced by muscular tissue and developmental processes which takes place as the uterus matures, has not been completed. This, then, is another way of saying that the uterus is infantile or hypoplastic. It has been noted that amenorrhea and oligomenorrhea are often associated with this hypoplasia.

5. Hyperesthesia of the Uterine Mucosa and Muscles: By this term it is meant, of course, that certain women are more highly sensitive to pain stimuli, attending which is believed by some, to be associated with imperfectly developed pelvic structure. Some have stated that this reaction is also associated with irregularities and late onset during puberty. We can well think of this theory from the standpoint of development and there may be a definite connection with the following theory. In fact it might well be included under the following theory because it is known and accepted that the development and function of the uterus is under the control of the endocrine system.

6. Endocrine: Fluhmann presented the theory that increased pituitary activity associated with hypoovarian function is an important factor. The basal metabolic rate is often low when the endocrine system is a causative factor. That immediately brings up the question as to the neurosis associated so often with dysmenorrhea. Is it a primary or secondary condition? It is not certain whether

the neurosis comes as a result of the pain or whether both of these conditions spring from the endocrine imbalance.

7. Pelvic Congestion: This term refers more to a passive congestion in the organs or some functional disturbance. Some of these may be due to abnormal sexual functions, bodily over exertion, excessive fatigue, constipation, long hours of standing or sitting, and lack of exercise.

8. Neurotic Causes: Some have suggested that a spastic contraction about the internal os of the cervix is a causative factor, perhaps associated with an exaggeration of the normal physiological uterine contractions which pass unnoticed in a woman of sound nervous balance.

9. Spasmodic Contraction of the Uterine Muscle: The motility of the uterine muscle has been found to be increased by the action of folliculin and lessened by that of progestin.

10. Allergy: Schwarz has assembled some facts, including the relief of a number of patients, suggesting that in some instances at least, dysmenorrhea may be an allergic reaction.

11. Systemic factors including anemia, poor posture, constipation, foci of infection (tonsils, appendix, teeth), emotional instability, obesity)—a few—were stressed by Goldwasser, reporting cases relieved from their menstrual symptoms when these general conditions were corrected.

SYMPTOMATOLOGY

The most characteristic part of symptomatology is that it is periodic, appearing cyclically and with some degree of regularity. If it occurs only occasionally it is no doubt due to some intercurrent cause such as illness, exposure, excitement, etc.

The pain may vary in degree from mild to very severe. The type of pain is described as spasmodic or crampy, this being most characteristic of the primary type, whereas a plethoric or congestive type of pain is associated with secondary dysmenorrhea. The location of the pain depends, of course, upon the chief symptoms, with its position, or the associated nervousness, lassitude, etc.

The time in the cycle is also a factor which is important. The pain may be pre-, co-, post-, or intermenstrual.

Intermenstrual pain (mittelschmerz) has received much attention. The pain in this condition is usually in the pelvis. Statistics seem to place it chiefly on the left, referred at times to the right pelvis and radiating to the thighs. It is usually colicy in nature. Often the pain is not present with the menstrual flow when there is a pain on the fourteenth day of the menstrual cycle. The cause of this discomfort is usually thought to be due to the expulsion of the ova, though some reference is made to it as an abortive attempt at menstruation. It is often associated with a leucorrhea; fibroids are found in a number of instances and association with sterility is not unusual. Examination may reveal symptoms of a pelvic congestion, perhaps an old inflammatory process resulting in oophoritis.

TREATMENT

Treatment should be considered under the following headings: Correction of pathology, hygiene, full term pregnancy, medication and surgery.

Correction of Pathology: Of course, it goes without saying that any gross pathology should be corrected. One should be very careful in making specific promises as to the correction of retrodisplacements of the uterus. Obviously tumors or infections of the pelvis usually give more gratifying results when corrected. This, of course, is under the division of secondary dysmenorrhea.

Hygiene: It is important to prevent exhaustion. On the other hand some observers have reported improvement when supervised, regular, specified exercise is followed between the menses and just before the flow. It is unquestionably to the advantage of the patient to see that there is adequate sleep and carefully to prevent the exhaustion of the reserve forces of the body. Body hygiene, adequate and wholesome diet, and tonics are important.

Full Term Pregnancy: A full term pregnancy often, though not invariably, gives relief. Pregnancy should certainly be given a trial if the woman is considering this within a short time, rather than any complicated surgical procedure.

Medication: Medication is divided into these classifications: Analgesics (for example, aspirin, amidopyrin or codein); sedatives (barbiturates or bromides), and antispasmodics (belladonna, calcium, benzyl benzoate, benzedrine sulphate, amphetamine sulphate); ergot derivatives and combinations of these.

Endocrines: There has been much controversy about the use of endocrine preparations in the treatment of dysmenorrhea. The follicular hormone of the ovary, corpus luteum, and the whole ovarian extracts have been very popular. Perhaps the purified preparations from the corpus luteum have been reported to give the best results. Extracts from the anterior pituitary gland and pituitary-like preparations have been given for the stimulating effect on the ovaries themselves. Thyroid has long been considered the keystone of endocrine therapy and as such should be considered in the endocrine approach to dysmenorrhea. Placental extracts and insulin have been presented by some workers for their beneficial effects. Perhaps the newest of the endocrine products used here is testosterone propionate. This product has its limitations and one is carefully warned about the possible undesirable effects.

Nasal Applications: Local medication to the genital spots (tuberculum septi) of the nose has long been recognized as helpful in a number of cases. Cocaine, trichloracetic acid, and cautery are the applications which have been used. Best results are reported when headaches and nausea are prominent symptoms.

RADIATION

Small doses of x-ray to the ovaries or to the pituitary gland or both have been reported to have given satisfactory results in the hands of competent radiologists. The treatment may have to be repeated in about three months.

Radium, of course, is also given for its effect on the ovaries and the uterus.

The use of x-ray and radium is divided into two general subdivisions—light radiation and menopausal dosage. The limitation of the last mentioned is immediately evident.

Pelvic Heat: Diathermy, with its newer improvement known as the ultra short wave, has been used with very satisfactory results. The ultra short wave type of machine is an improvement which is much easier to apply without possible complications in its administration. Some patients prefer this type of pelvic heat because of its ease of administration. It is given by abdominal application and its use is not restricted by an unruptured hymen. The Elliott machine depends for its effectiveness on the application of heat in an enclosed rubber bag-like system reaching the pelvic organs through a moderate distention of the vagina. This requires, of course, that the hymenal ring permit the insertion of the applicator. The Elliott machine is much easier to move and for this reason home treatment can be carried out when the office is not available to the patient.

Surgical: Dilatation and curettage have long been used and have also been condemned. There is no dispute, however, that a certain number of cases are benefited. Some investigators, particularly Larkin, contend that it is the dilatation which gives the desired results and that this can be carried on in the office without the use of curettage.

Curettage, however, does have two positive advantages: First, diagnostic, for example, when a submucous fibroid is found. Also the removal of the thickened endometrium may be helpful.

Stem Pessary: The stem pessary has long been used and has its place if watched carefully for complications, such as evidences of infection with its reaction and the contraindications of gross pelvic lesion. Here the chief usefulness seems to be in the infantile anteflexed type of uterus. With the long,

conical, pinpoint or stenosed cervix the pessary should be worn during two or three menstrual periods. Relief in fifty per cent of the cases has been reported by those who used this method.

Cleland Technique: This procedure requires a bilateral incision in the internal os one-sixteenth to one-twelfth inch deep. A second operation is done, curetting and packing the uterus. The gauze is left in for eight days.

Blair-Bell Method: The Blair - Bell method requires an incision, but in this method the incision is made on the anterior surface of the cervix after the vaginal mucosa has been dissected back. The outer portion of the cervix is then approximated, leaving the inner layer of muscle gaping.

Hysterectomy: This, of course, is a rather radical method, and extrauterine causes must be carefully excluded.

Presacral Sympathectomy: This method is a major operation requiring the abdominal approach and may be considered in extreme cases when other methods have not given relief.

Immediate Measures: For this, there should be rest in bed, hot or cold applications, and adequate medication prescribed.

What hope of relief may we offer these patients? From a report by Stacy and Shoemaker, Mayo's, 1937, the following is of interest:

	Helped %	No Help	Recurred %
Pregnancy		36.1	
Analgesics (139)	51		
Endocrines (129)	60		Usually with irregular menses
Ovarian extract (36)	65	33	
Progynon (22)	67	58	
Corpus luteum	55	55	
(Sistomenses) (27)	(partial)		
Emmenin (44)	48		35 severe 18 mild 6 months repeated dose
X-ray (5)			
Light (2)	100		
Menopause (3)	100		
Radium light (6)	84		
Menopause (50)	60		
Dilatation	40 to 50		
Stem pessary	50		
Cleland operation	75		

It is not "normal" for a woman to suffer at the menses. Dysmenorrhea is an indication that something is wrong. If a woman is disabled (in bed) one or two days with each menses and decidedly less efficient several more days, this means three or four days in the twenty-eight days, or 10 per cent of her time, in which she is below her usual efficiency. Whether this is for the home, office, hospital or social life it is a great factor in a woman's life. This is a competitive world. The most efficient win.

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RADIATION THERAPY OF CARCINOMA OF THE SKIN

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AT the present time there are several hundred articles available on the treatment of skin cancer. However, the consensus of the more recently published articles is to give larger total doses usually between eight to twelve skin erythemas with the methods of application varying. Contrary to this consensus, Mackee is one of the authors who advises a relatively small dose of radiation.

The skin epithelioma tends to be relatively benign and metastasize late, giving ample time for treatment of the lesion locally by surgery or radiation. There are exceptions to this rule, notably lesions of the tongue. Surgery is the treatment of choice in areas with poor blood supply, such as the dorsal surface of the hands or feet of elderly individuals.

Radiation can be used to better advantage in areas about the face since less scar is produced. The choice of treatment whether radium, röentgen ray or surgery by various methods will depend upon the experience and training of the physician. Each has its place. The lesion can be cured if treated adequately by either method in a large per cent of cases.

Leukoplakia and senile keratosis may be removed surgically or treated with superficial radiation. These lesions should then be observed closely with advice to the patient as to the proper care of the area. Dry skin should have frequent applications of a lotion that will aid in restoring the normal texture of the skin. Irritating teeth, tobacco and similar irritants should be eliminated. However, it is difficult to advise an elderly person to give up tobacco if that is his chief pleasure in life.

There are a number of reasons for failure to cure cancer. For instance, the delay on the part of the patient to seek medical advice or at times he may be told to forget about it since the lesion is small and harmless. Physicians should remember that a precancerous lesion is more easily treated than a cancer. Then too, the lesion recognized as a cancer may have inadequate therapy.

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Senile keratosis may be treated with unfiltered radiation using approximately 1,200 r units. However, an epithelioma has penetrated deeper into the skin, and I believe should always be given filtered radiation of at least one mm. of aluminum. This filter need not apply to the Chaoul type of therapy where much larger doses are given than I recommend. A margin of .5 cm. is included in the field about the lesion. A lead shield is carefully moulded about the lesion, then fixed firmly in position with the aid of adhesive tape. A cone larger than the areas is used, thus permitting slight motion by the patient without altering the total dose to all areas of the lesion.

SENSITIVITY OF LESION

The sensitivity of each lesion will vary, depending upon whether it is a basal cell or a squamous cell epithelioma and upon the bed of the carcinoma, that is the vascularity and location of the lesion. A fair per cent of basal cell lesions will have squamous cell elements mixed; hence it is wise to treat each lesion as a squamous cell carcinoma rather than treat a lesion later for continued growth. Epithelioma involving bone or cartilage requires a different technique. Most lesions

will clear up with adequate therapy and leave a fairly healthy area as a scar.

The so-called radiation ulcer will not occur often if a selected technique is used and if following this the area is properly protected from infection. Many such ulcers occur following small doses of röentgen ray in which the area develops an uncared for infection with production of an avascular scar. These are often painful and require surgical removal.

There is no set rule except that an adequate dose must be given, this preferably in the shortest time consistent with the healing of the tissue after therapy. The dose should be accurate. I use an r meter; the figures given will be r measured in air; this is a third less than the skin dose when large areas are covered. In small lesions there is less scattering, consequently the dose will be nearly the same as the skin dose.

The small lesions are usually treated, giving from 4,800 to 6,000 r at one time. I use 800 or 100 kilovolts with one mm. of aluminum filter. Lesions larger than one cm. in diameter are treated by dividing the same dosage, giving from 500 to 1,000 r each day for from five to twelve treatments. Lesions covering the entire nose or a large surface of the cheek may be given even smaller daily doses with nearly the same total dose.

Epithelioma involving the angle of the nose, ear or nasal cartilage or bone are treated with 200 kv. using .5 mm. to two mm. of copper filter, 200 to 300 r each day for a total of from 4,800 to 7,200 r units. Poor results are to be expected in these cases if in addition to the cartilage or bone involvement, there is an associated osteitis.

A moist boric acid pack or boric acid ointment has proven most valuable in clearing up infections associated with radiation treatments. I usually apply a gauze pack covered with cold cream or a mild ointment to these lesions following the completion of therapy. This protects the area and less bleeding will occur.

Lesions improperly treated the first time will require larger doses the second time. This is the reason that it is important to make sure that the treatment is accurately applied and that a record of such treatment is available to any physician who may see the patient later.

Each patient should return at frequent intervals until the lesion has healed completely. The patient is then asked to return each six months; however, should there be evidence of irritation to the area, he should consult a physician at once.

In regard to skin cancer, it cannot be emphasized too strongly that practically all such lesions can be cured if they are thoroughly treated in the early stage by intensive doses of radiation under the present skillful methods. The dosage should be sufficient to kill the cancer cells at the first treatment or series of treatments. If the lesion is treated insufficiently or irritated by unskilled methods until it involves the deeper structures, then failure will occur and the greatest skill of the radiologist and surgeon will give only a fair chance towards a cure.

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Lifting at a mechanical disadvantage is a common cause of strain in the sacroiliac or low back region, *Hygeia, The Health Magazine* points out.

VITAMIN K AND ITS USE IN THE PREVENTION AND TREATMENT OF HEMORRHAGE*

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UNTIL recently operations on patients with jaundice have carried a considerable surgical risk. In the past, according to the results obtained from several clinics,[1 2 3 4] fifty per cent of all postoperative deaths in patients with jaundice or liver disease were the result of hemorrhage. Ravdin[5] reported the incidence of hemorrhage in jaundiced patients operated on from 1922 to 1937 to be 21 per cent in his clinic. Walters[4] reported the risk of hemorrhage in cases of biliary obstruction due to malignant lesions to be from 10 to 14 per cent. Butt, Snell, and Osterberg[6] recently reported that in jaundiced patients, hemorrhage alone imposes a surgical risk of approximately five per cent.

Because of this surgical risk many efforts have been made not only to detect why these patients bleed but also to determine which ones would hemorrhage if surgery was attempted. Jaundiced patients with a normal bleeding time, normal coagulation time, and normal blood coagulating factors frequently bled while patients with abnormal factors frequently did not. Many views have been held regarding the nature of this disturbance and every blood clotting factor has been blamed by one writer or the other only to be discarded when found to be clinically unreliable. Ivy[3] in 1935 summed up the knowledge at that time by stating that "it seems as if the only way at present to determine a bleeding tendency is to see if the patient bleeds." He advocated his bleeding time to help detect this bleeding tendency but this failed to prove reliable.

In recent years it has been generally agreed that only four agents are required for adequate blood clotting. The process can be expressed as occurring in two steps:

(1) Prothrombin plus thromboplastin plus calcium equals thrombin.

(2) Fibrinogen plus thrombin equals fibrin.

A deficiency of any of these factors will result in a delay or a complete inhibition of clotting.

Thromboplastin is a cephalin-protein compound found in the body tissues, especially the brain. For blood clotting it is presumably derived from the blood platelets. The estimation of their number and fragility has been considered to be an adequate test for determining the presence of sufficient thromboplastic substance. Thromboplastin alone will not clot fibrinogen.

Much experimental work has been done to determine the part calcium plays in blood clotting. The most recent theory is that it causes a lysis of the platelets.[7] Most observers[3 8] believe that even though there may be a slight lowering of calcium in jaundiced patients, it bears no relation to the bleeding tendency. This is upheld by the fact that there is no bleeding in cases of hypocalcemia of parathyroid deficiency.

Blood fibrinogen varies in normal plasma from 0.3 to 0.75 per cent. This wide range has no demonstrable effect on the clotting time. Linton[9] and Lewisohn[10] reported high

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values even in jaundiced patients dying of hemorrhage. Moss[11] made similar observations in the study of experimental jaundice. The addition of purified fibrinogen to plasma does not alter the speed of clotting.

Eagle[12] has rather well demonstrated that the amount of thrombin formed is independent of calcium and platelets but depends on the plasma factor (prothrombin).

PROTHROMBIN

The remaining substance necessary for blood clotting is prothrombin, a component of the plasma proteins known physiologically by its capacity to form thrombin. It has a constant association with the plasma pseudoglobulin. Having never been isolated in pure form, little is known about its physical or chemical properties. Many believe it to be an enzyme. Patek and Taylor[13] regard prothrombin as a physiologic complex rather than a single chemical substance.

From the equation, prothrombin plus thromboplastin plus calcium equals thrombin, it can be postulated that if both the calcium and thromboplastin be kept constant, the rate of thrombin formation must become proportional to the concentration of prothrombin.

Oxalated blood does not clot because oxalate precipitates the calcium. In 1935 Quick and his associates[14] by employing oxalated plasma and recalcifying with a fixed and optimal quantity of calcium, made the calcium factor constant. By adding an active preparation of thromboplastin a maximum acceleration in coagulation was obtained. Thus with the addition of a fixed quantity of calcium and an excess of thromboplastin, prothrombin is the only variable and the clotting time of the oxalated plasma under these conditions can be considered a direct measure of the prothrombin concentration of the blood. An active and stable thromboplastin was required. Quick found the most satisfactory source of this substance to be rabbit brain. Shortly after Quick made his report, Warner, Brinkhous, and Smith[15 16] of Iowa, reported a method for the estimation of prothrombin which consists in defibrinating the plasma by the addition of a thrombin solution. The expressed residual fluid containing the prothrombin is set up in serial dilutions and tested against a constant calcium, tissue-extract, fibrinogen system.

About the same time that Quick was making his discoveries, Dam and Schonheyder[17] and Almquist and Stokstad[18] reported that a hemorrhagic disease could be produced in chicks by means of a diet deficient in certain substances. Dam and Schonheyder[19] found this to be a fat soluble substance which was designated as vitamin K or "koagulations-vitamin." The bleeding tendency in these chicks was found to be associated with a decrease in the concentration of the plasma prothrombin. Upon administration of substances containing the hypothetical vitamin the bleeding ceased, and the concentration of prothrombin rose to normal. Quick[20] was able to produce an appreciable diminution in the prothrombin of chick's blood as early as the fourth day after feeding Almquist's diet which is adequate except for vitamin K. When the prothrombin dropped below 20 per cent of normal a definite hemorrhagic tendency invariably developed.

WHERE VITAMIN K FOUND

Vitamin K was found to be a fat soluble substance, which is widely distributed in nature. It is found chiefly in the green vegetables and cereal grasses. Putrefactive organisms are able to synthesize a substance having vitamin K activity. In the past, alfalfa and putrefied fish meal have been the chief sources of vitamin K. Through the efforts of many workers[21 22 23 24 25] the vitamin was crystalized and finally synthesized. There are now many chemical compounds showing vitamin K activity, all of which are naphthoquinone derivatives. The synthetic compounds are more active than the natural vitamin and because of their standard potency and cheapness are more desirable. The final step has been the synthesis of a potent water-soluble compound which is stable and can be safely administered either intramuscularly or intravenously.

The exact relationship between vitamin K and the prothrombin content of the blood is not clear. It is fairly certain, however, that the two substances are not related chemically. There is both clinical and experimental evidence to show that the liver is intimately concerned in the formation, storage, or activation of prothrombin. By just what mechanism this is accomplished is not as yet known. One can assume that this vitamin serves as the building stone of prothrombin or that it is necessary to maintain normal function of the liver for the manufacture of prothrombin.

Dietary deficiency will produce a hemorrhagic tendency in animals, especially in chicks. It is difficult to see how any serious lowering of the plasma prothrombin content in man can be produced by a dietary deficiency since it is known that the putrefactive organisms in the digestive tract are capable of producing this vitamin. Warner, Spies and Owens[26] working with severely deficient patients concluded that a "study of the prothrombin level in patients having pellagra and associated nutritional deficiency states indicates that a vitamin K deficiency is not common in cases of this type. Complicating factors, as prolonged diarrhea does at times, however, result in a serious deficiency of this vitamin. Many chronically debilitated patients have a moderate hypoprothrombinemia which is not due to a vitamin K deficiency."

BILE REQUIRED FOR ABSORPTION

Since vitamin K is a fat soluble vitamin, bile is required for its absorption. Hawkins and Brinkhous[27] studied the bleeding tendency in dogs with biliary fistulæ and found that there was an associated low plasma prothrombin. By feeding bile alone there was a slow rise in the prothrombin concentration. Warner, Brinkhous and Smith[28 29] found that administering vitamin K alone was without effect while the administration of both vitamin K and bile salts caused a prompt return of the prothrombin to normal. The addition of prothrombin to the blood of these dogs caused the prompt formation of a clot.

The absence of bile from the digestive tract is also the cause of the lowered plasma prothrombin in obstructive jaundice. In August, 1938, we began studying the prothrombin concentration of patients with jaundice or liver disease admitted to the Cincinnati General Hospital. Except for a modification of the preparation of thromboplastin, the method used was that of Quick.

In most cases of jaundice the prothrombin level was below normal. The greatest lowering was found in those patients with obstructive jaundice due to malignancy because, as a rule, in these patients the obstruction is complete. The amount of lowering was not dependent upon the intensity of the jaundice but did bear a direct relationship to its duration.

TREATMENT

Jaundiced patients with normal prothrombin levels were treated prophylactically with vitamin K (one mgm. three times daily) and bile salts for from three to six days before surgical intervention was undertaken. The prothrombin level was determined the afternoon before operation to ascertain if a normal level had been maintained. Patients with a lowered prothrombin concentration were given bile salts and larger doses of vitamin K orally (two mgm. three times daily). If vomiting occurred the newer water-soluble vitamin K5 was given parenterally. An elevation of the prothrombin level was observed as early as six hours after treatment was started, and in the absence of severe hepatic injury a normal level was reached in from twelve to seventy-two hours. An adequate diet and the intravenous administration of glucose were, of course, still considered essential for preoperative care.

Hemorrhage following surgical intervention for relief of obstructive jaundice usually occurs between the third and ninth day after operation. This is usually evidenced by a rise in the prothrombin time which seems to occur with considerable regularity. Whether this is the result of injury to the liver resulting from the anesthetic or due to the loss of blood

at operation is not known. Postoperative bleeding may begin as a slight oozing from the wound or gums, or as hematemesis or melena. It may become generalized and severe without warning.

We continued the use of both vitamin K and bile salts postoperatively and also repeated frequently prothrombin determinations. Some years ago Green, Walters, and Fredrickson[30] showed that the bile which flows into the intestine after operation for duct obstruction frequently does not contain bile salts. Under such conditions it is easy to understand why bile salts should be continued with vitamin K, if given orally, until the concentration of serum bilirubin is within normal limits, until the stools contain bile and the prothrombin time is normal. By using this procedure we have had no unexplained hemorrhage in our cases.

VALUE OF BLOOD TRANSFUSION

Jaundiced patients actively bleeding upon admission to the hospital and those who had postoperative hemorrhage as a result of inadequate treatment were given large doses of vitamin K intravenously. Since normal blood contains a great excess of prothrombin a blood transfusion is of great value. However, this has only a temporary effect on the prothrombin level[31] exerting its influence for about six hours. Rhoads and Panzer[32] using a modification of Quick's method studied the prothrombin content of "bank blood" and concluded that there is a rapid fall. Therefore, they recommended that freshly drawn blood be used. Recently, Lord and Pastore[33] using the method of Warner, Brinkhous, and Smith, were unable to confirm this work. They reported a prothrombin level above 60 per cent of normal after three weeks of storage.

There is both clinical and experimental evidence to show that the liver is intimately concerned in the formation, storage, or activation of prothrombin[34 35 36] but by just what mechanism is as yet unknown. Severe bleeding associated with a low prothrombin content of the plasma is not uncommon in cirrhosis of the liver, despite the presence of bile in the intestine and the absence of marked icterus. Smith and his associates[16] and Quick[31] have shown that chloroform intoxication in animals can produce a marked deficiency in prothrombin and a resulting hemorrhagic diathesis. There is clinical evidence to indicate that in the presence of severe hepatic injury, prothrombin is formed poorly even when bile salts and vitamin K are administered. We have recently administered the water-soluble vitamin K in large doses (five mgm. three times daily) to two patients with extensive hepatic disease and failed to increase the plasma prothrombin content.

Clark, et al[37] at the Mayo Clinic, reported the observation of hemorrhage associated with a low prothrombin time in cases of postoperative intestinal obstruction. They believe this to be due to the absence of bile in the intestinal tract, because of the continuous duodenal aspiration and to an inadequate diet since no food is ingested. Butt, Snell, and Osterberg[6] have emphasized the importance of a normal intestinal surface for the absorption of vitamin K. They reported three cases of ulcerative colitis, two having non-tropical sprue, one having a gastrojejunocolic fistula, and one of intestinal obstruction due to multiple polypi of the colon, all of which showed a prolonged prothrombin time and all except those patients with sprue exhibited external bleeding.

BLOOD OBTAINED AT BIRTH

Brinkhous, Smith and Warner[38] observed uniformly a reduction in the plasma prothrombin levels in blood obtained from the umbilical cord at the time of birth. This reduction varied from 14 to 39 per cent of the normal adult control value. During the first eleven days of life, values varying from 26 to 44 per cent of normal were obtained. Hellman and Shettles[39] found the prothrombin level of the premature to be only about one-third that of the full term infant; that is, less than 10 per cent of the value of the mothers. Owen and his associates[40] working in Smith's laboratory observed a transient fall

in the prothrombin level between the second and sixth days of life. Waddell and Guerry[41] were able to verify this observation and believe that since the hemorrhagic disease of the newly-born rarely occurs after the fifth day of life there is some relationship between this disease of the newborn and the prothrombin content of the blood. This has been shown by many observers to be true. Quick and Grossman[42] postulate that the additional fall in the infant's plasma prothrombin may be due to its uninfected intestinal tract. Since the infant's intestine at birth is sterile, bacteria will not be present in sufficient quantities to synthesize vitamin K until about the fifth day. Hemorrhagic disease of the newborn, since it is due to hypoprothrombinemia, can be prevented or cured by the administration of vitamin K. This can be given either parenterally or added to the infant's feeding formula. If active bleeding is present the parenteral route is desirable. It would seem to be imperative to administer some form of vitamin K to all prematures and to those infants requiring some surgical procedure early in life.

SEASONAL VARIATION

Waddell and Lawson[43] have shown that there is a seasonal variation in the plasma prothrombin concentration of the infant, being the lowest during the winter months. Thayer and his associates[44] found this to be true also of the chick deficiency. Waddell and Lawson believe that in the human this is due to the lack of vitamin K in the mother's diet during the winter season. Studying the death rate from birth injury during a ten year period, Waddell and Lawson found that there was a remarkable increase during the winter months. They administered vitamin K to mothers for a few days before the onset of labor and to the infant for the first few days of life, and have reported essentially no neonatal hemorrhage. Almquist and Stokstad[45] found that if hens were fed on diets containing large amounts of vitamin K their eggs gave chicks which were more resistant to the development of hemorrhagic disease than were controls. While there is more work needed on this subject, it would appear that infant mortality may be greatly reduced by administering vitamin K to the mother before the onset of labor and to the infant during the first few days of life.

SUMMARY

The relationship between vitamin K and the plasma prothrombin is not definitely understood. This vitamin apparently is necessary for the liver to produce prothrombin. A lowering of the plasma prothrombin level occurs when there is an insufficient supply of vitamin K as results from a faulty diet or the failure of its absorption from the gastrointestinal tract. Failure of absorption may result from rapid passage through the bowel, the absence of bile in gastrointestinal tract, a reduction of the absorptive surface and defective fat absorption as occurs in sprue and celiac disease. Any liver disease, since this is presumably the site of manufacture of prothrombin, results in a lowering of the plasma prothrombin concentration. It is now known that hemorrhagic disease of the newborn is due to a lowered plasma prothrombin level. The administration of vitamin K will result in a prompt cessation of bleeding and a return of the prothrombin level to normal provided liver function has not been impaired to such a state that it can no longer produce this substance. Experimental evidence at the present time seems to indicate that the administration of vitamin K, prenatally, will result in a reduction of the number of stillbirths and the infant mortality rate.

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LEAD ENCEPHALOPATHY COMPLICATING TORULA INFECTION*

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THE study I wish to present describes one of the most unique cases ever seen by me in my industrial practice; unique in the sense that medical literature fails to reveal any information wherein the combination of torula and lead were found in a single case.

This case should be of particular interest to our group because the patient's employment was that of a spray painter for a firm manufacturing and repairing railroad tank cars. Thus, this becomes more closely associated with the type of cases we are confronted with daily in the practice of industrial medicine.

Up until two decades ago, lead poisoning was by far the greatest industrial intoxication; but this has gradually decreased by improved working conditions and education. However, we do see many new and old cases of lead poisoning, especially in automobile and enameling plants.

Torula infection was reported as early as 1902. Dorland defines it as comprising a group of yeasts which are spherical, nonspore bearing and have slight or no fermentive power. Up to and including 1936, there had been only 31 cases of torulosis reported in medical literature. It has been reported in Australia, Germany, Japan and about twelve states in the United States. However, it is quite likely the disorder is far more prevalent than would appear from the cases reported, because often it may be diagnosed incorrectly due to its similarity to syphilis, tuberculosis and neoplasms. Torula is saprophytic in nature but becomes pathogenic under certain favorable conditions. It reproduces by budding and shows a marked affinity for tissues of the cerebrospinal and pulmonary systems; but it is also found in the kidneys, liver, and spleen. The incubation period is unknown as are many more of its characteristics.

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The following is a brief resumé of this case:

CASE REPORT

James L.; age, 24 years; occupation, paint sprayer. First seen August 15, 1936.

Family History: Mother dead of tuberculosis.

Past History: In 1933 had a cervical gland removed, and was told it was a cyst. The glands again enlarged in 1934 and he was advised he had Hodgkin's disease and told to have a course of x-ray treatments which he did at intermittent dates. The glands reduced readily with treatment. Six weeks ago he was told he had a generalized Hodgkin's disease. He returned home, had two different physicians and finally called in a chiropractor who was treating him at the time of my first visit. He denies any previous operations or serious illness.

Present Illness: For the past six weeks he has been feeling debilitated, lost 30 pounds of weight, and has had nausea and vomiting which have been becoming progressively worse. He had attempted to work the previous week but had been sent home by his employer. According to his statement, his employment consisted of getting inside a tank car, scraping paint off the inside, and then spraying it with a red lead paint.

Complaints: Head and Neck: Roaring in ears, vision good. Cardiorespiratory: Essentially negative. Gastrointestinal: Anorexia, with abdominal pain especially after eating. Violent attacks of nausea even from drinking water. No hematemesis, some belching and flatulence at times. Diarrhea at times and again constipation. Genitourinary: Negative. Extremities: Generalized weakness.

*Read before the Association of Surgeons of the Chesapeake and Ohio Railway, White Sulphur Springs, West Virginia, November 8, 1940.

EXAMINATION

Physical Examination: The patient is a well developed, poorly nourished, white, male adult. Appears dehydrated and ill and in considerable pain.

Head: Hair abundant, scalp clean.

Eyes: Pupils equal, react to light and accommodation, no squint, discs slightly choked.

Ears: Negative to external examination, no discharge seen, hearing impaired.

Nose: Negative.

Mouth: Buccal mucous membrane pale. Tongue coated. No tremor. Teeth poor. Evidence of pyorrhea, and also a blue lead line seen on gum margin. Tonsils were not enlarged. Throat and all membranes were pale.

Neck: Few slightly enlarged glands, no rigidity, no marked tenderness, trachea at midline. Thyroid palpable.

Chest: Expansion good, symmetrical. Lung fields: Râles in both apices. Very slow respiration, some mediastinal dullness noted. Respiration ten.

Heart: Apex at fifth interspace inside nipple line. No marked pulsation or thrill seen. Sounds were distant. There was a marked bradycardia and a systolic murmur was elicited at apex. Rhythm regular, rate fifty. Blood pressure 115/60. Pulse pressure 55. No pulse deficit.

Abdomen: Scaphoid, no masses or abnormal pulsations, scars or signs of hernia. Liver was one finger breadth below the costal margin. Spleen not palpable. Kidneys tender on palpation. No abdominal dullness. Skin is tight and shiny when pre sed. Some general abdominal tenderness, especially over stomach. Patient unable to retain even water or chipped ice.

Genitalia: Bilateral varicocele.

Extremities: Definite weakness of all extensor muscles. Reflexes hypoactive. Negative Babinski.

General Impression: This patient presented the classical symptoms of lead poisoning with lead encephalopathy. Hodgkin's disease? (this only from history).

Follow-up Notes: The family was informed his prognosis was poor and advised to take patient to hospital, but this he refused to do. On August 17, 1936, about 3:00 a. m., I was called because he was having severe pains in his head; at this time he agreed to go to the hospital. He became semi-comatose and remained that way the greater part of the time until his death. However, there were times when he elucidated fairly well. On August 19, 1936, he developed an external strabismus which remained until he expired on September 2, 1936.

On August 19, I did a spinal puncture. The fluid was found to be under increased pressure. Eye examination at that time revealed choked discs.

Laboratory: Urinalysis: Specific gravity, 1022; albumin and sugar, negative; microscopy, few phosphates, occasional cast and red blood cell; lead sulphide test, positive.

Date, August 18, 1936: WBC, 12,350; RBC, 3,790,000; hb, 82 per cent; polys, 82 per cent; SM, 10 per cent; mono, four per cent; E; TR, two per cent; B; path. myel. cells, two per cent; 24 RBC with basophilic stipling counted per 100 WBC; slight polychromatophilia; Wassermann, negative; Kahn, negative.

Date, August 21, 1936: WBC, 12,050; RBC, 3,290,000; hb, 79 per cent; reticulocyte, 3.8 per cent.

Date, August 28, 1936: WBC, 12,250; RBC, 3,000,800; hb, 68 per cent; poly, 84 per cent; SM, 15 per cent; E, one per cent; Wassermann, negative; basophilic aggregation, eight to ten per cent.

Spinal Fluid: Many yeast cells present in smear. Sugar negative, quantitatively and qualitatively. Wassermann, negative; gold curve, negative.

X-ray: Chest negative for any pathology.

Diagnosis: Lead encephalopathy. Torulosis. Possible Hodgkin's disease.

Remarks: Permission for postmortem was obtained and autopsy was performed by Dr. Bernard Steinberg of Toledo Hospital. A thorough study of every part of the body was made. No trace of Hodgkin's disease found.

AUTOPSY FINDINGS

Lead poisoning was definitely proven by autopsy analysis in order to protect the patient's family and was later used medico-legally to obtain the widow her compensation. We will omit the findings relating to the lead and merely dwell on the findings due to torula. There was an extensive torula infection of the kidney with fibrosis. There were cortical abscesses involving cerebrum, cerebellum, and motor nerve tracts of the cord, with a torula meningitis. Torula organisms were found in the lumen of the blood vessels of the pancreas. Abscesses of the cortex of the adrenals were present. Myocardial fragmentation of the heart and cloudy

swelling were noted. Multiple tubercle-like areas of torula abscess were present in the lung. There was general hyperplasia of the lymph nodes. Acute splenic hyperplasia with torula in the parenchyma was found, and torula was demonstrated from various cavities of the body.

As to the causative factor of death, either disease might well be accused, as lead encephalopathy may be fatal. In localized torula infection the prognosis is fairly good, but in systemic involvement it is very unfavorable. As the brain symptoms are similar in both these diseases, we must, in my opinion, convict both factors and say each contributed its share in this patient's death.

This case was contested and later tried before the Ohio Industrial Commission with a verdict returned in favor of the plaintiff and his widow given the maximum claim. Specimens were reviewed and the diagnosis confirmed by several prominent pathologists.

NEW CRITERIA IN THE TREATMENT OF DIABETES MELLITUS WITH PROTAMINE ZINC INSULIN*

By LAWRENCE B. GANG, M. D.
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THE purpose of this paper is to call attention to a controversy now going on in medical circles concerning the treatment of diabetes, a controversy which may result in a fundamental change in our concept of the properly treated case.

Adequate regulation of the diabetic patient has always been thought to consist in balancing the diet and insulin in a way that maintains the urine free from sugar, avoids periods of hyperglycemia, and at the same time, avoids insulin reactions. In many patients this degree of regulation has not been possible, and the individuals who are difficult to regulate often vacillate precipitously from insulin shock to diabetic coma. With the use of protamine zinc insulin smooth adjustment occasionally is even more difficult.

Even before the use of protamine, the mild diabetic has never been very much of a problem, except when a blood sugar has revealed a hyperglycemia, necessitating a scolding and a warning, promptly forgotten in many cases with no dire results whatsoever. However, with the severe, or moderately severe diabetic, often juvenile, requiring insulin before each meal and occasionally at night, doctors and patients both hoped and prayed for something new. Balancing the dangers of a high blood sugar and glycosuria on the one hand, and the dangers of insulin overdosage on the other hand, the patient was required to make frequent visits, the percentage and exact amount in grams of glucose in each specimen, either in a 24 hour specimen, or in divided portions, was determined, as was also the blood sugar; the expense was great, labor long, and the results, while excellent compared to those of the preinsulin era, were still far from satisfactory. Perhaps the greatest objection was the multiplicity of hypodermic injections.

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DIFFICULTY OF REGULATION

In 1937, a new form of insulin was made available to the profession at large. Basically,

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it was regular insulin, to which had been added a protein and small quantities of zinc, resulting in a suspension of insulin much more slowly absorbable from the tissues than the insulin alone. New wonders seemed at hand. Now a single dose of insulin taken in the morning would act all day long, would keep the blood sugar normal and the urine sugar-free. But unfortunately, the results seemed more unpredictable than ever. Various corrections were tried. The protamine was given at night. It was given in divided doses. It was combined with regular insulin, the latter to act immediately, before the protamine became effective. Regulation was no easier than before; multiple injections were again necessary; diets were switched about; frequent feedings were attempted; unnaturally heavy meals were taken in the morning, and in various ways diabetics were once more reminded that they were a race apart, condemned to live abnormal lives. When the urine was rendered sugar-free, the patient was found to have very annoying and dangerous reactions — headache, uneasiness, hunger, irritability, and personality changes. Since the reactions came on suddenly, and did not correspond to the regular insulin reactions with which we were already familiar, they were particularly dangerous. Those cases which were subjected to repeated blood sugars showed great fluctuations. All this occurred because an attempt was being made to keep the urine free of sugar and the blood sugar normal. These have been our criteria for adequate regulation ever since diabetes was first understood.

HYPERGLYCEMIA UNIMPORTANT

While the writer was going through the procedure of transferring persons on regular insulin to protamine insulin, he experienced for himself the failure of keeping these patients "well regulated." The literature assured him it took time for the metabolic processes of the body to be adjusted. Then he had to resort to rearranging diets, and to adding regular insulin. He came to one very daring conclusion—that the blood sugar determination was of very little value in therapeusis, except where it was necessary to make a differential diagnosis of insulin reaction. So he took to basing his treatment on the urinary sugar alone, and on the presence or absence of acetone; he felt that with an absence of acetone in the urine, the height of the blood sugar was not very important, and that in those cases in which it was felt that renal function might be so poor that acetone was not being adequately excreted (such cases being in coma as a rule), a determination of the blood CO_2 combining power would yield information of far greater significance than a blood sugar. Before the writer is condemned as a dangerous heretic, let him state that Mosenthal,[1] as early as 1935, expressed the belief that the damage done to the patient with diabetes mellitus occurred not from the abnormally high level of blood sugar but rather from the long continued effects of glycosuria with its attendant polyuria. "Hyperglycemia without glycosuria, according to the available evidence, not only has no damaging effect on the heart and other tissues but is a necessary stimulus for the proper assimilation and oxidation of dextrose in many persons, both diabetic and non-diabetic. A prolonged, marked glycosuria with its attendant polyuria and dehydration is responsible for the diminished resistance to infectious processes, arteriosclerosis, formation of cataract, malnutrition, acidosis and coma, which are so characteristic of diabetes. Hyperglycemia without glycosuria is not a cause for these complications in diabetes."

GLYCOSURIA UNIMPORTANT

Now that we have demonstrated some doubt as to the importance of hyperglycemia, let us go further, and challenge glycosuria itself as a therapeutic criterion. It is well known that patients with renal glycosuria may excrete large quantities of sugar for years without any evidence of damage resulting therefrom except undernutrition. In the second place, there is evidence to suggest that a patient whose urine is sugar free and whose blood sugar is constantly within normal

limits may still not be properly regulated if the depots of glycogen, particularly in the liver, are not maintained at a normal level. This is in accord with the statements of many clinicians that their patients are very much better while on a high carbohydrate diet. The general experience with diets containing between 150 and 225 gm. of carbohydrates a day is that the patient feels better, likes his food better, needs little or no more insulin than on a lower diet and has fewer insulin reactions.

CASE HISTORY

These observations may be illustrated by the following excerpt from a representative case history. The patient was 38 years old, a male, recently rescued from severe ketosis and impending coma, his first indication that he had diabetes. He had a carefully outlined, high carbohydrate diet, and was taking 60 units of protamine each morning. He returned for his weekly check-up, weighed the same, felt fine, liked his food, and was thoroughly satisfied with the world, including his doctor. His doctor found 80 grams of glucose in the 24 hour specimen, and raised the insulin to 65 units. The following week he returned, complained of occasional dull headaches, and an absence of his previous exuberance. But his urine was normal, and he was told how well he was getting along. Instead of returning next week, he disobeyed and waited three weeks, at which time he confessed he had cheated on his diet, but insisted he felt fine. His urine, while negative for acetone, contained about 100 grams of glucose. Obviously, if the glycosuria could be ignored, this patient could be said to be well controlled.

One cannot help being impressed by such observations. They raise the possibility that our criteria for satisfactory treatment of diabetes may have to be reevaluated, that with protamine zinc insulin such fundamental therapeutic criteria as urine free from sugar and a normal value for blood sugar might stand revision. Is it at all likely that the patient's actual condition, that is, his weight, his ability to "carry on", his well-being and his psychic outlook, might be a more important guide than the height of the concentration of blood sugar and the glycosuria? How safe is it to allow patients to excrete large quantities of dextrose over long periods? Might this not be much less dangerous than negative urines and hypoglycemic reactions on the slightest provocation?

DANGERS OF HYPOGLYCEMIA

The writer hopes he is not creating the impression that he is merely an iconoclast. The diabetic must still be under strict supervision. Acetonuria is still a very significant finding. Nor is glycosuria to be ignored if the patient is losing weight and exhibiting symptoms. However, as the *Annals of Internal Medicine*[2] stated editorially in May, 1938: "It is impossible to say at present whether hyperglycemia and glycosuria are harmful if in other respects the sugar metabolism in the body is essentially normal. We can say, on the other hand, that severe insulin shocks and possibly repeated mild attacks of hypoglycemia are harmful and in the face of arteriosclerotic, coronary or cerebral arteries are actually dangerous." In July, 1938, the *Journal of the American Medical Association* spoke of the dangers in the use of protamine insulin in an editorial:[12] "Hypoglycemia is more subtle in onset. Preliminary symptoms of shaking, sweating, and palpitation may be absent; thus severe hypoglycemic symptoms may appear without warning. They are often followed so rapidly by unconsciousness that little warning is available for either patient or attendants. In some cases, death has followed. There is a definite possibility of danger to the arteriosclerotic patient from the prolonged and cumulative effect of these more complex insulin preparations. Reactions are often characterized by suddenness of onset, delayed and therefore unexpected appearance, and symptoms are precipitated by exercise at such a distant time as also to be wholly unexpected. Although the development of protamine zinc insulin is an advance of unquestioned value to many

diabetic patients, the possibilities of delayed severe reactions cannot be ignored." A patient of Wilder summed up the situation most eloquently when he said[13] that he no longer suffered from diabetes but now had insulin reactions.

NEW CRITERIA

This whole controversy was most effectively publicized by the report in the *Journal of the American Medical Association* of a Conference on Therapy held at the Cornell University Medical College and New York Hospital.[3] Quoting from Dr. Tolstoi: "As the result of recent experiments, we have been led to adopt a somewhat less orthodox point of view in the treatment of the diabetic patient. We have found that our experimental subjects were free from the symptoms of diabetes in spite of glycosuria when they were receiving a diet of 75 gm. of protein, 60 gm. of fat, and 200 gm. of carbohydrate, and protamine zinc insulin in daily doses of 50 units. Two rather unusual patients whom we observed in the metabolism ward for periods of 50 to 60 days maintained their weight. I want to emphasize this point. They also had no thirst or polyuria; they had no ketonuria, and they were in nitrogenous equilibrium in spite of the fact that they excreted as much as 150 gm. of sugar some days, and in spite of the fact that there was an ever present postprandial hygerglycemia. From such experiments we postulated that for patients treated with protamine zinc insulin the guiding features of satisfactory treatment should be (1) the maintenance of weight, (2) freedom from symptoms, and (3) absence of ketonuria. Furthermore, we were not concerned about the hyperglycemia or the amount of dextrose excreted. It is our belief that if the diabetic patient is made to utilize a quantity of carbohydrate essential for his particular metabolic needs the excess may be excreted without damaging results.

"We have had further opportunity to pursue these studies in ambulatory cases in the out-patient department, and our results there have been gratifying. We paid little attention to the glycosuria; we were guided by the principles mentioned, and the majority of our patients have done exceedingly well. They have been liberated from multiple injections of insulin and now receive one injection a day, putting their syringes away for the remainder of the time as they would their toothbrushes. Simultaneously there have been others in the same field who have adopted the point of view that the patient may excrete sugar with safety. The quantity of sugar excreted in 24 hours has been a question of controversy. Some say a diabetic patient is well controlled when he excretes only 10 gm. of sugar in 24 hours. Others permit him to excrete as much as 40 gm. of sugar a day. Our patients excreted as much as 150 gm. on occasions. Both of the patients whom we studied recently at this hospital excreted 100 gm. daily for 30 days, a total of more than six pounds of sugar. They were in nitrogenous equilibrium and they felt perfectly well."

ORTHODOX VIEW

The expected attack came in the form of a letter to the editor, in the issue of September 21, 1940, and signed by Elliot P. Joslin, Howard F. Root, Priscilla White, and Alexander Marble.[4] They wrote, in part: "It was with dismay that we read statements of Dr. Edward Tolstoi regarding the treatment of diabetes. Does it make common sense to say that an adult of average body build and activity receiving 1,640 calories daily in the form of carbohydrate 200, protein 75 and fat 60 gm. who is excreting 150 or even 100 gm. of sugar in 24 hours, thus leaving a net balance of 1,040 or 1,240 calories respectively, could maintain body weight and be in nitrogenous equilibrium for a prolonged period? Furthermore, is it sensible or economical to allow the wasteage of so large a part of the food eaten?

"According to Dr. Tolstoi, the patients were free from thirst and polyuria in spite of marked glycosuria. Does it seem at all likely that the average diabetic patient will be

symptomless while continuously excreting 10 per cent, or even five per cent, of sugar?

"Like many others, we believe in controlling the hyperglycemia of diabetes (1) because it is fundamentally an abnormal state, (2) because a high blood sugar is a constant stimulus for insulin secretion and allows no opportunity for rest and recuperation such as the pancreas of a healthy person enjoys between meals and at night, and (3) because control of hyperglycemia and glycosuria proves utilization of the diet whereas their disregard leads, in our experience, to accessory annoyances such as polydipsia and polyuria, the attendant necessity for extra food to make up for the loss of calories in the urine and the obvious wear and tear on the system for ingestion, assimilation and excretion of this unutilized extra food, quite apart from needless cost and waste. A high percentage of sugar in the blood implies the same in the tissues; we think it likely that, directly or indirectly, this conduces to lack of normal tissue repair and resistance to infection, predisposes to degenerative phenomena in arteries and nerves and leads to weakness, weariness and impotence, although we freely admit that positive proof is lacking that all these harmful effects are due to hyperglycemia per se."

NEW VIEWS DEFENDED

To this emphatic criticism, Dr. Tolstoi replied in the October 12, 1940 issue of the Journal.[5] Quoting from his letter: "One of the statements made by Drs. Joslin, Root, White and Marble reads 'It does not make common sense to say that an adult of average body build and activity receiving 1,640 calories daily in the form of carbohydrate 200, protein 75, fat 60 gm. who is excreting 150 or even 100 gm. of sugar in 24 hours, thus leaving a net balance of 1,040 or 1,240 calories respectively, could maintain body weight and be in nitrogenous equilibrium for a prolonged period.' I cannot argue the point of whether or not 'it makes sense.' The facts published in July, 1939, clearly show that both patients studied did maintain their weights for from five to six weeks, the experimental period.

"Then again Drs. Joslin, Root, White, and Marble argue 'Does it seem at all likely that the average diabetic patient will be symptomless while continuously excreting 10 per cent, or even five per cent sugar?' Whether it seems likely or not, the patients studied were singularly free from symptoms on days when they did excrete five per cent and even 10 per cent of dextrose. I was just as dismayed at this turn of events as were Drs. Joslin, Root, White, and Marble. Nevertheless, such were my observations, and they were so recorded in all honesty.

BELIEFS AND IMPLICATIONS

"The Boston group admits that the proof is lacking that hyperglycemia per se is damaging, but insists on perpetuating 'beliefs' and 'implications' of its effect on infections and atherosclerosis. Too much attention has been paid to glycosuria and high blood sugar, a carryover of the preinsulin era. With the use of protamine zinc insulin these criteria must be revamped as by the use of this hormone carbohydrate oxidation is assured for about a 24 hour period.

"To advance, medicine in general and diabetes in particular must be based on firmly established facts obtained by recognized and reliable procedures. The metabolic experiment was done under carefully supervised conditions, the personnel was well trained and the data were most reliable. The results can be questioned only if and when the Boston group, repeating this experiment, obtains contradictory data. Then Drs. Joslin, Root, White, and Marble will be in a position to challenge the facts. The Boston group believes in the orthodox treatment of diabetes. I myself am not much worried about the orthodox treatment of diabetes, as records show that orthodox views have changed at least once, and sometimes more often, in each decade since 1914. From my work I am of the opinion that there may be more than one good method of treating diabetes. Based on my experimental data I have extended the

technique to the out-patient department, and the report of that work will appear shortly in the *Archives of Internal Medicine.*"

In connection with the above, it might be interesting to quote from an address by Dr. Priscilla White[6] made in December, 1937, before the Section on Pediatrics of the Southern Medical Association: "Protamine insulin is successful, but if the physician or the patient are perfectionists, the preparation will be disappointing for the cumulative action is such, that, if the patient is maintained constantly sugar-free, reactions of severity are inevitable. For this reason, our standard of control, based upon the twenty-four hour quantitative specimen of urine, is no longer 100 per cent but 90 per cent."

The report to which Dr. Tolstoi[7] referred appeared in the September, 1940 issue of the *Archives of Internal Medicine.* Eighty-four diabetics were followed for one year in the out-patient department; they received one daily injection of protamine insulin, and no particular effort was made to maintain urines free from sugar. Despite this, only twenty-seven patients revealed persistent glycosuria. Strangely enough, these 27 patients were in good health, and furthermore, they were in a state of social and economic usefulness. Not only did the majority of them maintain their weight, but some gained weight. There were no complaints or symptoms at any time associated with the glycosuria, and infections were no more frequent in this group than in the group whose urine was mostly free from sugar. All the patients in this group enjoyed much more freedom, as there appeared no necessity for careful dietary measurements, and it was not necessary for them to carry with them their syringe and insulin. Thus, the patients were not singled out as a group apart from their fellow men, and their habits of living approximated the normal.

UTILIZATION ALL-IMPORTANT

At this point it may be argued that since we direct our efforts toward making the lives of this group normal as to living habits, why not extend our efforts in the direction of "physiologic normality" so far as the diabetes is concerned; that is, toward obtaining urine free of sugar and possibly a normal level of blood sugar, as these objectives have been considered synonymous with proper utilization of the carbohydrates? This may be sound, but what evidence is there to show that with protamine zinc insulin such utilization of carbohydrates does not occur in spite of hyperglycemia and glycosuria? None whatever. Glycosuria has been such a dominant component in the study of the treatment of diabetes that the more important factor of utilization has been almost totally ignored, although it was emphasized long ago by the Russell Sage group of investigators. This group of observers established with certainty that for short periods, at least, the diabetic patient, irrespective of the severity of the disorder, is capable of utilizing carbohydrate. Unfortunately the process did not continue. Today one can prolong this utilization of carbohydrates by means of insulin, so that in place of the short duration of the so-called "physiological ideal" utilization, a longer duration is produced. If this postulate is accepted, hyperglycemia and glycosuria must be of secondary importance. The most important and physiologic basis for satisfactory treatment, therefore, is not how much sugar is excreted but how much is metabolized.

USE OF INSULIN

Recently, Bridge and Winter,[8] have studied this question of carbohydrate metabolism while noting the effect of insulin on diabetic patients. They found no correlation whatever between the height of the blood sugar and the respiratory quotient in cases of diabetes treated with insulin. They reported also that with wide fluctuations from the hyperglycemic to the hypoglycemic level there was no indication that carbohydrate was being utilized at different rates. In other words, these investigators have clearly demonstrated that in an insulin-treated diabetic person carbohydrate is utilized in the presence of hyperglycemia and sequential glycosuria. They also pointed out that in the par-

tially regulated patient hypoglycemia may indicate no more than an excessive deposition of muscle glycogen, and hyperglycemia may develop without changing that more fundamental aspect of carbohydrate physiology; viz., combustion. They concluded that in view of these important findings neither the value for blood sugar nor the degree of glycosuria is an adequate criterion for the regulation of diabetes. Their conclusion is particularly applicable to patients treated with protamine zinc insulin, in whom carbohydrate utilization can be maintained as long as the insulin is active.

From the clinical side Tolstoi and Weber reached similar conclusions. They feel that if a state of carbohydrate utilization can be maintained in the diabetic person (and this is readily accomplished by the use of protamine zinc insulin), a physiologic state has been created, and they believe furthermore that the guiding principles for such a status in the presence of glycosuria and hyperglycemia should be (1) maintenance of weight, (2) freedom from symptoms of diabetes, and (3) absence of ketone bodies in the urine.

HEALING AND INFECTION

Several references have been made to the effect of hyperglycemia and glycosuria on healing and on resistance to infection. For many years they have been considered the "fifth column" in the defense of the diabetic. However, doubts concerning this state of affairs have been expressed at various times. A. A. Epstein has stated[9] that pyogenic organisms may be rendered less virulent by adding glucose to the culture medium, and it was his opinion that glucose has the same effect in the body. It is our common experience that by means of glucose infusions we induce temporary hyperglycemia and glycosuria in non-diabetic patients suffering from infections or following operations, but that never seems to concern us very much. As a matter of fact, we feel we are doing some good. Tolstoi believes[10] that the view that healing is delayed in the diabetic is a carryover from the old regime. Dehydration was outstanding at that time. If the diabetic patient is well hydrated and no infection sets in, healing will take place, he feels.

An increasing number of reports are coming out tending to remove the blame from glycosuria and hyperglycemia. Greene and his co-workers at the State University of Iowa[11] reported recently the results of a study of the relation of hyperglycemia and glycosuria to wound healing and the incidence of infection in 324 cases of diabetes mellitus. They found: (1) Delayed healing of wounds did not occur as frequently in the patients with the higher blood sugar levels and greater degrees of glycosuria as it did in those with lower blood sugar values. (2) On comparing the healing of wounds in their diabetic patients with that in their non-diabetics of the same age and sex with comparable lesions, they found that the diabetic patient's chance of having delayed healing is approximately four per cent greater. However, their study showed that the incidence of delayed healing of wounds in areas which were well supplied with blood was no greater among the diabetic than among the non-diabetic, but when the wound-bearing area was poorly supplied with blood the incidence was higher among the diabetic. Since it is generally agreed that patients with diabetes tend to develop arteriosclerosis earlier and to a greater degree than non-diabetics, the authors believe arteriosclerosis is the factor accounting for the poorer healing. They also suggest lower utilization of dextrose as a possibility, regardless of the blood sugar level. (3) Diabetes did not interfere with the healing of infected wounds. (4) As to the incidence of infection, the wounds of the patients with the higher blood sugar levels became infected less frequently than those of the patients with the lower levels. These observations do not substantiate the popular opinion that high blood sugar levels with diabetes mellitus tend to promote the development of infection. The presence of arteriosclerosis, however, increases the incidence of infection regardless of the blood sugar level and degree of glycosuria.

One more aspect of the whole problem of hyperglycemia remains to be reviewed, and that is the question of whether a high blood sugar level predisposes to an early arteriosclerosis. This certainly is the accepted belief. However, it is the opinion of the writer that arteriosclerosis might have developed prematurely because of the relatively high fat diets prescribed in an attempt to avoid glycosuria, particularly before the days of insulin. Enklewitz, at the Montefiore Hospital in New York City, questioned the rôle played by diabetes in the causation of arteriosclerosis about six years ago. Tolstoi,[10] in studying the younger diabetic groups, has been taking röentgenograms of their leg vessels and studying their blood cholesterol. He has watched these severely diabetic groups now for a period of seven years or more, taking x-ray plates at intervals of six months, and he has been unable to note any calcific lesions in their vessels. On the other hand, he recalls a diabetic woman 22 years of age whose symptoms were only two months old as far as could be determined, and the röentgenograms of her tibial vessels showed marked calcific deposits. With such facts it is difficult to accept the postulate that diabetes predisposes to vascular sclerosis. That view may have been tenable in the preinsulin era, but it certainly should be challenged today, to stimulate further studies in that direction. One wonders whether the study of a large control group under 40 might not lead to a reconsideration of the existing hypotheses.

SUMMARY

The writer has offered evidence from his own experience and from the literature to prove that in diabetes mellitus, the most important step in the metabolism of carbohydrate is its utilization, while the blood sugar level and glycosuria are of minor importance. Clinically, the absence of symptoms, the maintenance of weight, and the absence of ketonuria are of more significance than hyperglycemia or glycosuria. Hyperglycemia per se is not harmful, nor does it delay healing, predispose to infection, or to arteriosclerosis. Hypoglycemia, on the other hand, is harmful, and in the arteriosclerotic, may be actually dangerous. This is not to be construed as an argument for neglecting the diabetic. The patient taking protamine insulin, it is true, is thereby enabled to utilize all the carbohydrate he requires; hence, he may eat a normal, high carbohydrate diet, while at the same time glycosuria is ignored so that he need not run the risk of insulin reactions. However, periodic check-ups are still of the utmost importance to guard against ketosis, weight loss, hypoglycemia, and other complications. Furthermore, it may be well to emphasize that those diabetics who are not taking protamine insulin still require the same supervision as always, with the prevention of glycosuria and hyperglycemia. In such cases we can judge the severity only by these signs, and have no reason to expect continued utilization of carbohydrate throughout the day. Moreover, since we do not have the danger from hypoglycemia that exists with the use of protamine insulin, we have no reason to permit glycosuria.

It may be that perhaps an insufficient amount of work has been done to prove the foregoing conclusions beyond any doubt. However, it is hoped that their publication will help stimulate further research and investigation along these lines, for the benefit of the many thousands of diabetic individuals whose lives and happiness depend on protamine zinc insulin.

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Pneumonia Complicating Operations

Infections of the respiratory tract complicating surgical operations or severe injury should be treated in the same manner as any acute lung infection, Lewis T. Stoneburner, III, M.D., and Maxwell Finland, M.D., Boston, advise in *The Journal of the American Medical Association* for April 5.

Pointing out that the availability of highly potent specific remedies for the treatment of pneumonia, such as serums and sulfapyridine and sulfathiazole has resulted in a sharp drop in the death rate from this disease wherever such remedies have been used extensively, the two physicians declare that "it is probably fair to say that pneumonia occurring after surgical operations or after serious trauma (injury) is usually considered by both surgeons and laymen to be an unfortunate complication which often results in fatalities when the treatment of the primary condition is otherwise successful."

They report on their findings from 279 cases of pneumococcic pneumonia complicating surgical operations and 92 such cases occurring after serious injuries. In all instances the type of pneumonia was ascertained. Modern specific treatment was found by them to be as effective in pneumonia following injuries as in primary cases of the disease and also to be highly effective in cases following operations.

They advise that pneumococcus typing should be done and cultures of sputum or of material from the throat and blood cultures should be taken as soon as a diagnosis of pneumonia is suspected. Treatment with sulfapyridine and sulfathiazole should be instituted, under proper control, as soon as evidence of pneumonia appears.

ANASTOMOSIS OF THE VAS DEFERENS

(Case Report)

By J. F. BARKER, M. D.
Huntington, West Virginia

THE AUTHOR

Dr. Barker, graduate University of Kansas, 1934; interned C. & O. Hospital, Huntington; urologist, St. Mary's Hospital, Huntington; Mid-Atlantic Section American Urological Association.

SUCCESSFUL repair of the vas deferens following bilateral vasectomy is rare enough in our experience to justify the following case report:

L. M., age 28, was first seen four years ago when a bilateral vasectomy was done. His wife was in very poor health and the family physician advised against further pregnancies. Microscopic study of condom specimen after operation showed no spermatozoa present.

He was divorced afterward and married again one and one-half years ago. Children were desired with this union.

On September 9, 1939, bilateral anastomosis of vas was done following the technique of Twyman and Nelson.[1] Under spinal anesthetic the vasa were delivered and the stenosed ends cut. Potency was determined by passing a horse hair to the proximal and distal ends. Gentle pressure on the epididymis expressed fluid containing spermatozoa. An intestinal needle, threaded with O catgut, was passed through the lumen approximately one-half inch. The two ends were tied, making a loose hammock. Fine silk thread was split and the edges of the cut ends were sutured with layers approximated.

October 21, 1939: Specimen of semen contained 10 to 40 spermatozoa per high power field.

March 23, 1940: Specimen showed a normal sperm count. The wife became pregnant and gave birth to a girl baby on November 4, 1940.

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Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

The parable of the sower served Osler well in his effort to explain the protean nature of tuberculosis. The interplay between seed and soil, both highly variable, accounts for the infinite variety of pathological patterns seen in this disease. Of late, so much emphasis has been placed on the rôle of the seed (tubercle bacillus infection) that interest in the soil has probably been slighted. For that reason two timely papers concerned with the influence of nutrition on the development of tuberculosis merit attention. Space permits little more than a summary of the conclusions of these articles.

Constitution and Diet in Tuberculosis

Resistance to disease may depend upon many things, but probably the most important, all other things being equal, is the inherited constitution. This belief is based on epidemiological studies, family records, studies of identical and fraternal twins, and animal experimentation. Excellent examples of each are cited and interpreted by the author.

The constitution can, however, be modified by outside influences not the least of which is the food we eat. That diet does influence the cause of tuberculosis has been well demonstrated by students of the problem during economic depressions and war.

For example, Denmark's experience during the World War is significant. In the belligerent countries the tuberculosis death rate rose steadily and reached its peak in 1918. In Denmark also the rate rose but the peak was reached in 1917 and fell precipitately. From the beginning of the war Denmark exported great quantities of butter, cattle and bacon; margarine replaced butter in the diet. There was loss of vitamins A and D. The consumption of meat and fish fell off. In 1917 the blockade interferred with exportation. The consumption of butter in Denmark promptly quadrupled, and that of meat increased almost fivefold. Total calories consumed did not vary much. All other factors that might influence the tuberculosis rate were accounted for. The consumption of meat and fish seemed to parallel the mortality curve inversely—the consumption of vegetables did not.

Isolation of the patient with open tuberculosis has reduced the chances of infection in others and has lessened perhaps the infecting dose and the possibility of repeated infections. Moreover, as the generations have come and gone, natural laws have acted to weed out the susceptibles. Better dietary habits, especially during the past twenty years, have enhanced inborn resistance to all diseases including tuberculosis. These two factors, the inherited constitution and the better understanding of nutrition, have played their part in the reduction of the tuberculosis mortality rate.

Constitution and Diet in Tuberculosis, by Fred H. Heise, M.D., Amer. Rev. of Tuber., February, 1941.

Vitamin C and Tuberculosis

As healing in tuberculosis is characterized largely by the formation of connective tissue, and the latter is formed by the action of vitamin C on fibroblasts, it does not seem unreasonable to suspect that a vitamin C deficiency may be one of the causes of unfavorable trends in tuberculosis, if it does not actually contribute to exacerbations of the disease. Replenishment of such deficiency may help to change the disease from an unfavorable to a more favorable one. This reasoning led to a study of vitamin C in health and disease in addition to extensive therapeutic experiments made in a large series of cases of pulmonary tuberculosis.

The authors summarize previous studies of vitamin C—the normal daily requirements, the requirements in tuberculous individuals, results of analysis of organs for vitamin C, and other phases of the subject.

In the first phase of the experiments 98 carefully selected tuberculous persons were divided into three groups, as impartially as possible, and members of the groups were matched as closely as possible. One group received daily, in addition to the general hospital diet, 500 c.c. of a synthetic orange-flavored preparation, to which was added an amount of crystalline vitamin C equivalent to the vitamin C in the same volume of fresh orange juice. A second group received daily, in addition to the general hospital diet, 500 c.c. of freshly prepared orange juice. The third group received, in addition to the general hospital diet, 500 c.c. of the orange-flavored preparation without vitamin C (the control group). Of the 98 patients, 60 remained to the end of the six months experiment period.

In analyzing the charts at the end of the experiment there is so much similarity of the three groups that they are practically interchangeable. While

(Continued on page xxvi)

President's Page

"Welcome to Charleston."

In two weeks the doctors of West Virginia will head toward the Capitol City for what we believe will be one of the largest and most important annual sessions in the history of our Association. On behalf of the host society, of which I happen to be a member, I bid you welcome and wish for you a happy and profitable three day meeting.

The complete program for our seventy-fourth annual meeting is published in this convention number of the JOURNAL and needs no elaboration from me. It reflects the careful consideration and hard work of our excellent scientific committee. The scientific program and the many social and business activities should be sufficient to attract a record breaking crowd.

What I do want to discuss with you once again is the problem of voluntary sickness insurance for West Virginia. Various thoughtful Association leaders have given painstaking study to this problem almost constantly for the past three years. To assist our Medical Service Committee, a referendum of the entire Association membership was recently carried out to determine how the rank and file of Association members felt on this important matter. The referendum was conducted only for the guidance of the Medical Service Committee and the results should be considered in that light.

At the time this page was written, approximately 550 returns were in. This represents about 40 per cent of Association members. Slightly over 70 per cent of those voting favored some type of voluntary sickness insurance under the guidance of the organized medical profession. About 29 per cent were in opposition and one per cent commented without voting.

This unusually large vote favoring a system of voluntary sickness insurance does not mean that the Association is going to rush headlong into an insurance plan. It means, however, that a plan setting forth fundamental policies and principles will be submitted to the House of Delegates at the Charleston meeting. The House of Delegates can either adopt, reject or modify the proposal of our Medical Service Committee. We believe this proposal will closly follow the Michigan plan which was discussed in such complete detail at our Conference of County Presidents and Secretaries in January. If the proposal is adopted, we will then set up the necessary machinery to carry it out. If it is rejected, we will mark time for another year.

This question of voluntary sickness insurance should bring many doctors to the Charleston meeting. Couple this with an outstanding scientific program, with a gala round of social events, and with the camaraderie and fellowship that prevails at a doctors' convention, and you can hardly afford to stay away. We are looking forward to a record breaking turnout.

Robt. C. Burford

President.

West Virginia Medical Journal

P. O. Box 787
Atlas Building
CHARLESTON, WEST VIRGINIA

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THE CHARLESTON SESSION

The seventy-fourth annual meeting of the West Virginia State Medical Association will be held in Charleston on Monday, Tuesday and Wednesday, May 12, 13 and 14, 1941, with headquarters at the Daniel Boone Hotel. The general scientific sessions, the scientific exhibits and the technical exhibits will be held in the Shrine Mosque, directly across the street from the hotel. The complete convention program and all details relating thereto will be found elsewhere in this convention number of the JOURNAL.

The scientific committee headed by Dr. R. J. Wilkinson, Huntington, has assembled a group of nationally known medical and surgical talent for the Charleston meeting and the program promises to be one of the best in years. For the third straight year, all of the general scientific sessions will be held during the morning hours, from 9:30 to 12:30 o'clock. Afternoons will be given over to the section and specialty meetings.

Sections and special groups which will meet at Charleston include the Sections on Surgery, Medicine, Pediatrics, Eye, Ear, Nose and Throat, Industrial Medicine, Obstetrics and Gynecology and the Heart Association. Several of these groups have arranged special luncheons. If other groups desire luncheon or dinner meetings, arrangements should be made at once through the office of the Association headquarters at Charleston.

Association golfers are planning their annual tournament for Monday afternoon, May 12, at the Kanawha Country Club's 18-hole course near South Charleston. The Auxiliary tournament will be held at the Edgewood Country Club on Monday, May 12. Tennis enthusiasts will start their annual tournament at the Charleston Tennis Club on Sunday, May 11. There will be both singles and doubles matches.

One of the outstanding features of the 1941 convention will be the open public meeting in Charleston's new Municipal Auditorium on Monday evening, May 12, with Dr. Morris Fishbein, editor of the *Journal of the American Medical Association*, as the speaker. His subject will be "The Prolongation of Life." As an additional feature for the public gathering, some half a dozen health and medical exhibits have been secured from the New York and San Francisco world's fairs and will be on display at the auditorium on the evening of Dr. Fishbein's talk.

The social side of the convention has not been overlooked by the host society. On Monday evening, the opening night of the meeting, Dr. and Mrs. W. P. Black of Charleston will be hosts to the entire convention at a dance at the Edgewood Country Club, following Dr. Fishbein's address. On Tuesday evening the Kanawha Medical Society will entertain the convention with a night club dance. On Wednesday evening the convention will close with the annual Association banquet and ball at the Daniel Boone Hotel.

On behalf of the Kanawha Medical Society we extend a hearty welcome to every West Virginia doctor and to every doctor's wife to the Charleston meeting. We predict a registration of doctors that will pass the 500 mark and we know that all in attendance will enjoy a pleasant and enlightening three day session.

REFERENDUM ON INSURANCE

For the information and guidance of the Association's Committee on Medical Service, a referendum on voluntary sickness insurance was conducted about the middle of April. The results indicate that West Virginia doctors favor some plan of voluntary sickness insurance by a majority of better than two to one. When the referendum was taken, it was carefully explained that the results were not binding on the Association. The results, therefore, should be considered on that basis.

More than 50 per cent of the Association members voted on the referendum. Seventy-one per cent favored some plan of voluntary sickness insurance, 28 per cent were against it and one per cent returned their ballots with comments but without voting. No definite insurance plan was considered. The doctors expressed themselves on the broad general question, "Do you favor an Association controlled plan of voluntary sickness insurance in West Virginia?"

While 71 per cent voted in the affirmative, the opposition made up in volubility what it lacked in numbers. The opposition appeared to be strongly militant. Typical comments were, "Insurance is a private business and a doctor has no business in it", "Am opposed to any form of sickness insurance", "When the government or any association takes medicine over, I quit", "Why borrow trouble", "This is merely another step towards government medicine." These and many similar comments indicate a vigorous minority.

The next question on the ballot was whether insurance should include home and office calls for minor illness or be limited to catastrophic illnesses only. On this question there was a substantial majority that favored all-inclusive coverage. About 35 per cent felt that insurance should cover only catastrophic illnesses and five per cent failed to express themselves on this question.

The doctors voted approximately four to one in favor of limiting coverage to the low income group. Many salary limitations were suggested, the average being approximately $150 per month. A large majority favored a separation of medical and surgical from hospital insurance.

Now that the Association membership has unofficially expressed itself as favoring some type of insurance, it is to be assumed that the Medical Service Committee will submit a definite proposal at the Charleston meeting. In all probability this proposal will embody many of the features of the Michigan plan which was discussed in great detail at the Conference of Secretaries and Presidents at Charleston in January. The fact that Association members have voted favorably on the principle of voluntary insurance does not mean that these same members, or the delegates representing them, are constrained to vote favorably on some particular plan submitted to the committee. It is therefore likely that the committee may ask the House of Delegates to consider something in the nature of a constitution and by-laws to govern a definite West Virginia plan, leaving the actual working out of technical details to the authority set up in the constitution and by-laws.

The Michigan plan, which has been so often discussed in West Virginia is a voluntary non-profit group medical care plan organized by the Michigan State Medical Association after 10 years study. The medical benefit plan is separated from the surgical benefit plan and subscribers are at liberty to take either or both. Under both plans, the subscriber has free choice of doctor. A brief discussion of the two types of service may be of interest here.

The monthly rate for the medical benefit plan is $2.00 per subscriber, $3.50 per husband and wife, and $4.50 per family. Under this plan the doctor makes no extra charge to an individual subscriber whose annual income is less than $2,000 or to a family head who makes less than $2,500 per year. Subscribers earning in excess of these amounts may be enrolled but they can be charged by their attending doctor the difference between the

ordinary charge and the amount established in the schedule of benefits. Subscribers are entitled to receive home, office and hospital calls; consultation, x-ray, laboratory and anesthetic services, and obstetrical service after 12 months. After the payment of the first $5.00 incurred for medical service, the subscriber is entitled in any one subscription year to $325 worth of medical services for the individual, $550 for husband and wife or $875 worth of services for a family. The payment of the initial expense is to avoid excessive demands for trivial services.

The surgical benefit plan costs forty cents per month per individual, $1.20 per month for husband and wife, and $2.00 per month per family. Benefits include surgical services, diagnostic x-ray services and maternity services after 12 months. The plan is open to groups and there is no salary limitation. However, subscribers with incomes over $2,000 per year can be charged "extra" by the attending surgeon.

Under both the medical benefit and surgical benefit plans, all medical doctors in good standing may participate under the rules and regulations set up by the plan. Payments to doctors for services rendered are made on a "unit" basis so that subscribers are not familiar with the schedule of fees. Available funds are prorated to the doctors rendering service.

At the close of 1940, Michigan had an enrollment of 117,000. Of this number, 112,000 were signed up for the surgical benefit plan and 5,000 for the medical service plan. There were 3,321 doctors registered with the plan; approximately 75 per cent of the total number possible.

DR. SWINT RESIGNS

Due to ill health, Dr. Benjamin Harrison Swint of Charleston resigned several weeks ago as chairman of the Association's Advisory Committee to the Department of Public Assistance, a position which he has held since the creation of the department approximately eight years ago. Upon the advise of his physician, Dr. Swint gave up all of his outside activities, including direction of the medical preparedness program in West Virginia and approximately fifteen additional active assignments on civic, religious and welfare bodies.

We take this occasion to pay just tribute to the valuable services rendered organized medicine in West Virginia by Dr. Swint. More than almost any other Association member, he has given of his time and talent to further the rightful interests of his chosen profession. In doing so, he has won the admiration and esteem of his confreres throughout the state. By giving up his outside activities, Dr. Swint will be able to continue his private surgical practice. We wish him happiness and a speedy return to robust health.

The new Public Assistance Advisory Committee is composed of Dr. Thomas H. Blake, Saint Albans, chairman; Dr. Paul H. Revercomb, Charleston, and Dr. Hugh Bailey, Charleston.

Dr. Rome H. Walker, Association past president of Charleston, has taken over Dr. Swint's duties as director of medical preparedness.

SAMPLES FOR BRITAIN

As much as we individually might be in sympathy with the "Bundles for Britain" movement, one recent phase of it hardly has our approval.

At several points in the country there has been a movement to collect the samples left by pharmaceutical detail men in physicians' offices and include them in the shipments for British relief. This is an expensive and uncontrolled way of supplying pharmaceutical products.

Most all of the pharmaceutical manufacturers have individually donated supplies with vitamin capsules and other needed pharmaceutical products to the British relief at no charge.

The packaging of a sample increases the cost and if these samples are collected and sent to Britain, then the purpose for which they were intended, that is, for the use of physicians, is not accomplished, and the heterogenous material that reaches British relief probably would have little value. Many samples left physicians would be dangerous if used indiscriminately without the advice of a physician.

In some cases individual city and county medical societies have been asked to cooperate with the collection of these samples. It is our opinion that such cooperation should be refused for the obvious reasons stated.

Nursing Survey

One of the first projects of the Nursing Council on National Defense, organized in July, 1940, was a nationwide survey of registered nurses to determine their availability as the need arose, Pearl McIver points out in the March-April issue of *War Medicine*, published by the American Medical Association, Chicago, in cooperation with the National Research Council, Washington, D. C.

"That many additional nurses will be needed is a recognized fact", she declares. "Mobilization of a million men for military training each year for the next five years makes it necessary for the Army to expand its nurse corps by more than 4,000 nurses before June, 1941. In the event of war this number would be tripled, and additional nurses would be needed in many of the allied services.

"Present methods of warfare appear to result in more casualties among the civilian population than among the armed forces. Therefore, protecting the health of civilians and providing medical and nursing care for the civilian population are equal in importance to providing medical and nursing care for the Army and Navy. It is imperative to meet the needs of the Army and Navy for additional nurses, but at the same time the public health and civilian hospital staffs must be maintained at an efficient level."

By means of the survey of the Nursing Council, Miss McIver states, "it is hoped to obtain a complete roster of all registered nurses in America, both active and inactive, and to know for what type of nursing each nurse is best fitted."

General News

To Appeal A.M.A. Trial

"The jury in the case in which the United States Government brought suit on criminal charges in a conspiracy against four medical associations and twenty-one individual defendants brought in its verdict at 11 p. m. on April 4", *The Journal of the American Medical Association* for April 12 says in an editorial which states that an appeal from the verdict will be made.

"When the prosecution had completed presentation of its evidence, Justice Proctor directed the jury to acquit the Harris County Medical Society, the Washington Academy of Surgery and two of the individual defendants. One of the individual defendants, Dr. Groover, died before the case came to trial. The final decision of the jury found the American Medical Association and the District of Columbia Medical Society guilty and declared all of the individual defendants not guilty.

"Newspapers, radio commentators and many others at once expressed confusion in endeavoring to understand this verdict. This confusion arose because five members of the staff of the American Medical Association, including the secretary, the only ones connected by the prosecution with this case, were declared by the jury to be innocent of the charges, yet the organization itself was found guilty. Likewise, the verdict found the defendant officials and members of the various committees of the District of Columbia Medical Society to be innocent, and yet the organization itself to be guilty. The attorneys for the American Medical Association and the District of Columbia Medical Society are undertaking at once legal procedure toward setting aside this verdict and toward making a suitable motion to appeal.

"The instructions given to the jury by Justice Proctor, which are published in full in the April 12 *Journal* should be of interest to every physician. They state succinctly the extent to which the activities of the American Medical Association in carrying on its affairs, in raising the standards of medical colleges and hospitals by inspection and approval or disapproval, in the publication of facts regarding medical activities, and in the maintaining of the Principles of Medical Ethics fall within the bounds of legal conduct."

Obstetric Pilgrimage

The annual mid-year pilgrimage of the West Virginia Obstetrical and Gynecological Society was held in Cincinnati, Ohio. March 20, 21 and 22.

Dr. H. L. Woodyard of the Cincinnati General Hospital was in charge of the clinic. A three day clinic and lecture schedule was arranged at the General Hospital and Christ Hospital. This consisted of ward rounds, observation in the operating rooms and delivery rooms, lectures and symposiums on outstanding phases of obstetrical and gynecological practice.

The West Virginia group was guest of honor in the annual banquet of the Cincinnati Obstetrical Society at the Netherland-Plaza Hotel on the evening of March 21. Dr. Joseph L. Baer of Chicago delivered the address of the evening.

Seventeen physicians from over the entire state attended this three day session.

Strauss is Stopped

The following letter from the Honorable Joe V. Gibson, United States Attorney for the Northern District of West Virginia, gives the windup on "Doctor" S. S. Strauss, who plied his trade as a relief physician in West Virginia last summer and fall. Writes Mr. Gibson:

"This will advise you that Samuel Liebowitz, alias Samuel Seymour Strauss, alias Charles Freeman Kreuger, was indicted at the present term of court at Parkersburg and upon arraignment entered a plea of guilty and was sentenced to two years in the United States Penitentiary, Atlanta, Georgia. The defendant's criminal record shows his confinement in the Federal Reformatory in Chillicothe and Lewisburg Penitentiary for eighteen months.

"Our investigation shows that this defendant had no medical training but did work as an orderly in federal reformatory hospitals and in this way qualified himself to practice medicine, all of which appears to me to be a good laugh on you doctors.

"Thanking you for your assistance in getting this imposter to the place where he will look the best."

Past President's Pictures

In February we published a list of Association past presidents whose photographs the Auxiliary has not been able to locate. Pictures of Dr. B. W. Allen and Dr. J. E. Rader were sent in as a result of the publication of this list. The Woman's Auxiliary, through Mrs. Ralph Hogshead of Montgomery, has done a wonderfully valuable piece of historical research on this project and has now secured pictures of all but eight of the past presidents. Historically minded Association members will please get in touch with Mrs. Hogshead if they are able to throw any light on where photographs might be obtained of the following past presidents:

Dr. J. W. Ramsey, Clarksburg, president in 1870.

Dr. J. M. Lazzell, Fairmont, president in 1872.

Dr. S. W. Hall, Jane Lew, president in 1874.

Dr. Nathew Campbell, Parkersburg, president in 1875.

Dr. W. F. Van Kirk, Grafton, president in 1881.

Dr. A. Gerstell, Keyser, president in 1884.

Dr. A. H. Thayer, Grafton, president in 1901.

Dr. G. A. Aschman, Wheeling, president in 1902.

Hospital Association Meets

The annual Carolinas-Virginia Hospital Conference, of which the West Virginia Hospital Association is a part, was held at Greenville, South Carolina, on April 24, 25 and 26, 1941. Interesting and valuable papers and panel discussions on prepayment insurance were held.

The West Virginia section meeting was held on the opening day of the session.

Medical Golfers

The American Medical Golfing Association's twenty-seventh annual tournament will be held at Cleveland Country Club-Pepper Pike Club, Cleveland, Ohio, Monday, June 2, 1941. Two famous championship courses and a beautiful clubhouse await the nation's medical golfers in Cleveland on the occasion of the A.M.A. convention.

The sixty prizes, in the nine events, will be distributed after the banquet at the Cleveland Country Clubhouse at 7:00 p. m.

Auxiliary Bulletin

This is the last call for reservations for the nineteenth annual convention of the Woman's Auxiliary to the American Medical Association which will be held at Hotel Carter in Cleveland, June 2-6. All Cleveland extends a hearty welcome to you.

Fulton Memorial Lecture

The annual William S. Fulton Memorial Lecture delivered under the sponsorship of the Wheeling Clinic, will be given this year by Dr. Walter Simpson of the Miami Valley Hospital, Dayton, Ohio. Dr. Simpson is a director of the Kettering Institute for Medical Research of the Miami Valley Hospital. He is well known for his work in collaboration with Charles S. Kettering in the development of physical methods for the production of artificial fever.

Dr. Simpson is also a prominent investigator in the fields of tularemia and undulant fever.

He will address the members of the Wheeling Clinic and their guests on Tuesday, May 7 at the Windsor Hotel, Wheeling. A dinner will be served at 6:30 o'clock, followed by the program of the evening.

After the scientific program a number of interesting social events have been planned for the entertainment of the visiting doctors.

The Wheeling Clinic issues a cordial invitation to all physicians to be present on this occasion. Reservations should be sent in at once if it is possible for you to attend.

Dr. Lawson's New Book

Just at press time the JOURNAL received a complimentary copy of a new book, "Fifty Years a Mountain-Country Doctor", which is the highly interesting and colorful autobiography of Dr. Sidney B. Lawson, prominent Logan physician. The book is more than an autobiography; it is filled with reminiscences of a rugged doctor of the old school, together with a compendium of personal medical observations, theories and advice, and much practical information.

While time is not available to do real justice to Dr. Lawson's book in this JOURNAL issue, we hasten to commend it to all those who like to relax and harken back to the good old horse and buggy days. Dr. Lawson's volume contains 175 pages, it is privately printed by the author, and can be had for the modest sum of $1.75 per copy.

A sample of its homely philosophy is reflected in Dr. Lawson's quotation, "If your face can't get your picture in the paper, write a patent medicine testimonial, maybe your kidneys will."

A compound utilizing prevulcanized latex as the basic substance, for making artificial ears and noses is reported in *The Journal of the A. M. A.* for April 5.

Obituaries

Doctor George Andrew Rigrish

Dr. George Andrew Rigrish, proctologist, 68 years of age, died in the early morning of April 7, 1941, after a lingering illness. He was born in Scioto County, Ohio, in 1872 and was graduated from the Medical College of Ohio, Cincinnati, in 1896. After practicing for many years in Ohio, he came to West Virginia in 1922 and specialized in proctology.

The deceased is survived by his widow and one daughter in Charleston.

Doctor Samuel A. McConkey

Dr. Samuel A. McConkey of Barboursville died in a Huntington hospital of pneumonia on April 8, 1941, at the age of 78 years. He was born in Salem, Virginia, and received his medical education from the Richmond Medical College. After practicing a short time in Fayette county, he located in Barboursville and served the people there for 36 years.

Dr. McConkey is survived by his widow, five daughters, four sons, 21 grandchildren and five great grandchildren.

Doctor John M. Fadely

Dr. John M. Fadely, prominent Mason county physician, died at his home in Point Pleasant on April 10 of coronary thrombosis. He was 63 years of age and had practiced his profession in Mason county for more than 35 years.

Dr. Fadely was born near Point Pleasant in 1877. After his preliminary education, he graduated in medicine from Maryland Medical College, Baltimore, in 1905 and received his West Virginia license the same year. He served many years as Mason county coroner and was one of the charter members of the reorganized Mason County Medical Society in 1927.

More important than the recent revolutionary developments in the technique of anesthesia is the realization that the field is intensely complicated, requiring the balanced judgment of highly trained medical men, McKinnie L. Phelps, M.D., New York, declares in *Hygeia, The Health Magazine.*

Official Call

To the Officers and Members of the West Virginia State Medical Association

The Seventy-fourth annual session of the West Virginia State Medical Association will be held at Charleston, West Virginia from Monday, May twelfth to Wednesday, May fourteenth, Nineteen hundred and forty-one.

Headquarters will be at the Daniel Boone Hotel.

The House of Delegates will convene at four-thirty o'clock on Monday afternoon, May twelfth, and again on Tuesday evening, May thirteenth.

The Scientific Assembly of the Association will open with the General Meeting at the Shrine Mosque on Monday, May twelfth at 9:30 A. M.

The various sectional meetings will be held during the three afternoons of the convention according to their respective programs.

Attest
Joe W. Savage
Executive Secretary

Robert King Buford, M. D.
President

Charleston, West Virginia, April the fifteenth

GENERAL SCIENTIFIC ASSEMBLY

Monday Morning, May 12, 9:30

Shrine Mosque Auditorium

Call to Order—Dr. Robert King Buford, Charleston, President.

Invocation—Leonard Riggleman, D.D., President, Morris-Harvey College, Charleston.

Address of Welcome—Dr. P. A. Tuckwiller, President, Kanawha Medical Society.

Response—Dr. George W. Easley, Williamson.

SCIENTIFIC PROGRAM

"Rheumatic Fever."

Dr. Stanley Gibson, Professor of Pediatrics, Northwestern University Medical School, Evanston, Illinois.

"Rheumatic fever in childhood is manifested by a great variety of phenomena, most important of which are joint pains, chorea, subcutaneous nodules, annular erythema, and heart involvement. Significance of these phenomena will be considered."

Discussion:

Dr. Jack Basman, Charleston.
Dr. Thomas G. Folsom, Huntington.

"Prognosis in Heart Disease."

Dr. Wm. G. Leaman, Jr., Assistant Professor of Medicine in charge of Department of Cardiology at Women's Medical College of Pennsylvania.

"Factors influencing prognosis in heart disease are outlined. The effect of newer methods of treatment (both medical and surgical) on prognosis is stressed. 'Curable types' of heart disease are discussed." (Lantern slides).

Discussion:

Dr. H. R. Sauder, Wheeling.
Dr. Oscar B. Biern, Huntington.

Monday Evening, May 12, 8:30

Municipal Auditorium

PUBLIC MEETING.

"The Prolongation of Life."

Dr. Morris Fishbein, Editor of the *Journal of the American Medical Association*, Chicago, Illinois.

"This talk will deal with the gradual increase in life expectancy throughout the United States brought about by the advancement of medical science. It will discuss the new developments that have occurred with vitamins, glandular substances and the newer antiseptic drugs. It will discuss also new techniques which have been developed in surgery with a view to controlling the major causes of death. I shall contrast the causes of death in 1900 as they are listed today and indicate the steps that we may take in order to prolong life still further."

Tuesday Morning, May 13, 9:30

Shrine Mosque Auditorium

"Amputations of the Upper and Lower Extremities."

Dr. Henry H. Kessler, Medical Director, New Jersey Rehabilitation Clinic, Newark, N. J.

"The essayist will stress the use of individual muscles as motors for artificial limbs, and demonstration of the use of cinematic hands."

Discussion:

Dr. L. A. Whitaker, Weirton.
Dr. H. D. Gunning, Ronceverte.

"The Handling of Hearing Problems in General Practice."

Dr. Charles E. Kinney, Otologist, Cleveland Public Schools, Cleveland, Ohio.

"Practical points in the detection of hearing defects both in general practice and as surveys in school systems. Suggestions as to the treatment of such defects."

Discussion:

Dr. E. L. Jones, Wheeling.
Dr. M. A. Gilmore, Parkersburg.

ORATION ON MEDICINE.

"Important Newer Concepts Concerning Cancer of the Intestine and Their Bearing on Management."

Dr. J. Arnold Bargen, Mayo Clinic, Rochester, Minnesota.

"Various theories of the cause of cancer exist. The data obtained from a large experience with cancer of the intestine bearing on these theories will be discussed. The development of single and multiple polyps, their relation to cancer, the association of submucosal lymphoid changes in the cancer bearing intestine, inflammatory changes and their relation to cancer, the processes of healing associated with inflammatory disease and their relation and familial factors will be considered. The various types of cancer will be discussed. These factors will be considered according to their bearing on present day management."

"The Importance of Differentiating Psychoneurotic and Somatic Pain From Visceral Pain."

Dr. Edgar van Nuys Allen, Mayo Clinic, Rochester, Minnesota.

"Patients may have pain without having any organic disease to account for it. Pain may originate in structures which surround the viscera, as well as in the viscera. However, from a clinical standpoint these observations have been overlooked too frequently and many patients who have either psychalgia or pain arising in muscles and fascia have been treated either medically or surgically for visceral diseases which they did not have. The purpose of this presentation is to discuss some of the aspects of the various kinds of pain, the clinical differentiation of them, and to emphasize a simple method which is frequently of value in relieving psychoneurotic and somatic pain." (Lantern slides).

Discussion:

Dr. R. O. Rogers, Bluefield.
Dr. J. E. Martin, Elkins.

Tuesday Evening, May 13, 8.00

Ballroom, Daniel Boone Hotel

PRESIDENTIAL ADDRESS.

"The Physician in the Changing Order."
Dr. Robert King Buford, Charleston, President, West Virginia State Medical Association.

NOTE—The House of Delegates will convene in the Auditorium immediately following the Presidential Address for the purpose of electing officers for the coming year and disposing of pending business.

Wednesday Morning, May 14, 9:30

Shrine Mosque Auditorium

"Management of the Toxemias of Late Pregnancy."

Dr. Tiffany J. Williams, Professor of Obstetrics and Gynecology, University of Virginia Department of Medicine, Charlottesville, Va.

"A discussion of the present generally accepted classification of the hypertensive toxemias with an outline of the treatment and management for the various types."

Discussion:

Dr. C. L. Goodhand, Parkersburg.
Dr. James R. Bloss, Huntington.

"Choice of Anesthetics for Emergency Procedures."

Dr. George J. Thomas, Pittsburgh, Pa.

"This paper will deal with a review of the various types of anesthetic agents. A brief discussion on the indications and contraindications for the various anesthetic agents in use." (Lantern slides).

Discussion:

Dr. L. D. Norris, Fairmont.
Dr. E. B. Tucker, Morgantown.

ORATION ON SURGERY.

"Operative Wound, Treatment and Healing."

Dr. Hugh Bailey, Charleston.

"This comprises the historical resume and the review of all recent literature, and the recording of our experience with the presentation of a series of cases treated with highly satisfactory results. The statistics and records were compiled by Dr. John Condry, assistant resident surgeon, Charleston General Hospital."

"Some Problems of Biliary Tract Surgery."

Dr. Isidor S. Ravdin, Professor of Surgery, University of Pennsylvania, School of Medicine, Philadelphia, Pennsylvania.

"Within the past decade considerable information has become available regarding the pathologic physiology of biliary tract disease. The relationship of cardiac abnormalities to biliary tract disease, diet in relation to liver injury and regeneration, hemorrhage, and a number of other problems are now more clearly understood and means are available of affecting certain abnormalities prior to operation. I shall discuss the means we are using to prepare our seriously ill biliary tract cases and show what effect such preparation has had upon operative mortality."

Discussion:

Dr. Wade H. St. Clair, Bluefield.
Dr. Russell B. Bailey, Wheeling.

ANNUAL CONVENTION BANQUET

Wednesday Evening, May 14, 7:30

Ballroom, Daniel Boone Hotel

Toastmaster — Robert J. Reed, Jr., Wheeling.

10:00 P.M. Until Closing

CONVENTION DANCE

SECTION ON PEDIATRICS

Monday Afternoon, May 12, 2:00 to 4:00

Sunroom, Daniel Boone Hotel

Chairman—Dr. Theresa Snaith, Weston.

Secretary—Dr. Henrietta Marquis, Beckley.

Roundtable on "Rheumatic Fever."

Dr. Stanley Gibson, Northwestern University, Chicago, Illinois.

Assisted by:

Dr. J. L. Blanton, Fairmont.
Dr. Harry E. Baldock, Charleston.

WEST VIRGINIA SOCIETY OF INDUSTRIAL PHYSICIANS & SURGEONS

Monday Afternoon, May 12, 2:00 to 4:00

Clubroom, Daniel Boone Hotel

President—H. H. Haynes, Clarksburg.

Secretary—E. Bennette Henson, Charleston.

"The Determination of Physical Fitness."

Dr. Henry H. Kessler, Newark, New Jersey.

"Dust and Gases Found in Coal Mines."

Dr. R. R. Sayers, Director, U. S. Bureau of Mines, Bethesda, Maryland.

"The Opportunities Presented to the Physician in the Field of Industrial Health or Hygiene."

Dr. Paul A. Neal, Surgeon-in-Chief, Research Section, Division of Industrial Hygiene, National Institute of Health, Bethesda, Maryland.

"Lead Poisoning."

Dr. R. H. Dunn, South Charleston.

WEST VIRGINIA HEART ASSOCIATION

Monday Afternoon, May 12, 2:00 to 4:00

Shrine Mosque Auditorium

President—Dr. P. A. Tuckwiller, Charleston.

Secretary—Dr. W. A. Thornhill, Jr., Charleston.

PRESIDENT'S ANNUAL ADDRESS.

"Thiocyanates in the Treatment of Hypertension."

Dr. P. A. Tuckwiller, Charleston.

"Recent Additions to Our Knowledge of Cardiovascular Disease, With Special Reference to Their Clinical Application."

Dr. W. G. Leaman, Jr., Philadelphia, Pa.

"In recent years various laboratory and clinical investigations have greatly advanced our knowledge of cardiovascular disease. This presentation discusses the possible application of these newer concepts in the management of the cardiac patients." (Colored lantern slides).

Discussion:

Dr. R. M. Wylie, Huntington.
Dr. G. R. Maxwell, Morgantown.

SECTION ON EYE, EAR, NOSE AND THROAT

Tuesday Afternoon, May 13, 2:00 to 4.30

Clubroom, Daniel Boone Hotel

Chairman—Dr. Ben W. Bird, Jr., Princeton.
Secretary—Dr. John H. Trotter, Morgantown.

"Testing Hearing and Evaluation of Results in Mathematical Figures."

Dr. Charles E. Kinney, Otologist, Cleveland Public Schools, Cleveland, Ohio.

"The results of comparative testing by the audiometer of pure tone loss and spoken voice loss. An attempt to correlate these two methods in arriving at a percentage loss for use in legal or industrial commission work." (Lantern slides).

Discussion:

Dr. S. S. Hall, Clarksburg.
Dr. V. E. Holcombe, Charleston.

"Head Injuries Extraglobar Influencing Factors"

Dr. H. V. Thomas, Clarksburg.

"Injuries which appear minor, outside the globe, may be more serious than contemplated. Crushing injuries of the face repaired early are less disfiguring than late correction. Severe trauma to the head may cause latent loss of vision not evidenced at the time of injury. Careful examination with attention to the above factors will eliminate some of the present day difficulties."

Discussion:

Dr. W. F. Beckner, Huntington.

SECTION ON INTERNAL MEDICINE

Tuesday Afternoon, May 13, 2:00 to 4:30

Shrine Mosque Auditorium

Chairman—Dr. James L. Wade, Parkersburg.
Secretary—Dr. P. A. Tuckwiller, Charleston.

"Our Increasing Knowledge of the Peripheral Circulation."

Dr. E. V. Allen, Rochester, Minn.

"In the past fifteen years, clinical and experimental studies have led to an excellent understanding of the physiology of the peripheral circulation of man and of the diseases which affect the circulation of blood and lymph in the extremities. This paper discusses the speed with which blood flows through the arteries and veins of the extremities, hypertension, the circulatory adjustments necessary for man who lives in both the horizontal and vertical plane, phlebitis and other circulatory disturbances." (Moving picture film).

Discussion:

Dr. H. C. Jones, Montgomery.

CHAIRMAN'S ADDRESS.

"Sudden Death."

Dr. James L. Wade, Parkersburg.

"The interesting phenomena of sudden death is discussed from the etiological and pathological standpoints. Cases taken from the author's practice are presented."

"Recent Advances in Gastroenterology."

Dr. Frank J. Holroyd, Princeton.

Discussion:

Dr. R. J. Stevens, Huntington.
Dr. W. C. Swann, Huntington.

WEST VIRGINIA OBSTETRICAL AND GYNECOLOGICAL SOCIETY

Wednesday Afternoon, May 14, 2:00 to 4:30

Clubroom, Daniel Boone Hotel

President—Dr. Harry E. Beard, Huntington.
Secretary—Dr. A. P. Hudgins, Charleston.

"Experiences With Postpartum Sterilization."

Dr. T. J. Williams, University of Virginia Department of Medicine, Charlottesville, Va.

"Experiences with postpartum sterilization is an analysis and review of three hundred and nine cases of sterilization performed during the puerperium." (Lantern slides).

Roundtable Discussion.

SECTION ON SURGERY

Wednesday Afternoon, May 14, 2:00 to 4:30

Shrine Mosque Auditorium

Chairman—Dr. B. S. Brake, Clarksburg.
Secretary—Dr. Hu C. Myers, Philippi.

"Carcinoma of the Stomach."

Dr. R. H. Walker, Charleston.

"Cancer of the stomach is just as curable as cancer of any other part of the body. The purpose of this paper is to try to stimulate more interest on the part of the profession as to its proper management."

Dr. I. S. Ravdin, Philadelphia, Pennsylvania.
(*Title to be announced later*)

"Ureteral Obstruction — Intrinsic Versus Extrinsic."

Dr. R. D. Gill, Wheeling.

"Attention is called to the anatomy, physiology and dynamics of the ureter. Methods of diagnosis or ureteral obstruction are discussed."

GUESTS OF HONOR

Dr. Edgar van Nuys Allen, Rochester, Minnesota, Associate Professor of Medicine, University of Minnesota Graduate School; Diplomate American Board of Internal Medicine.

Dr. J. Arnold Bargen, Rochester, Minnesota, Associate Professor of Medicine, University of Minnesota Graduate School; Diplomate American Board of Internal Medicine; National Gastroenterological Association.

Dr. Morris Fishbein, Editor, *Journal of the American Medical Association;* Assistant Clinical Professor of Medicine, Ruth Medical College, Chicago, Illinois.

Dr. Stanley Gibson, Professor of Pediatrics, Northwestern University Medical School, Chicago, Illinois.

Dr. Henry H. Kessler, Newark, New Jersey, Attending Orthopedic Surgeon to Newark City Hospital, Beth Israel Hospital, Hospital and Home for Crippled Children, and Hasbrouck Heights Hospital; Medical Director of the New Jersey Rehabilitation Clinic.

Dr. Charles E. Kinney, Otologist, Cleveland Public Schools, Cleveland, Ohio.

Dr. Wm. G. Leaman, Jr., Assistant Professor of Medicine, Women's Medical College of Pennsylvania, Philadelphia, Pennsylvania.

Dr. Paul A. Neal, Surgeon-in-Chief, Research Section, Division of Industrial Health, National Institute of Health, Bethesda, Maryland.

Dr. Isidore S. Ravdin, Professor of Surgery, University of Pennsylvania School of Medicine, Philadelphia, Pa.

Dr. Royd R. Sayers, Director, United States Department of Mines, National Institute of Health, Bethesda, Maryland.

Dr. George J. Thomas, Pittsburgh, Pennsylvania, American Society of Anesthetists.

Dr. Tiffany J. Williams, Professor of Obstetrics and Gynecology, University of Virginia, Department of Medicine, Charlottesville, Virginia.

SCIENTIFIC EXHIBITS

The scientific exhibits will be housed in the card room of the Shrine Mosque, where all the general sessions will be held. The following spaces have been alloted for scientific exhibits:

(1) Dr. H. C. Jones, Laird Memorial Hospital, Montgomery—X-ray films.

(2) Dr. Howard A. Swart, Charleston—Orthopedic frame and pictures.

(3) Dr. W. J. G. Putschar, Charleston—Pathological exhibits.

(4) State Hygienic Laboratory—Motion pictures.

(5) West Virginia Workmen's Compensation Department—Silicosis exhibit.

(6) Mrs. John Pushkin, R.N.—Scientific drawings.

(7) State Health Department—Public health exhibit.

(8) Hopemont Sanitarium, Hopemont—Tuberculosis exhibit.

(9) West Virginia Pharmaceutical Association—Drug exhibit.

(10) Pinecrest Sanitarium, Beckley—Microscopic slides.

(11) West Virginia Bureau of Industrial Hygiene.

DELEGATES AND ALTERNATES

B-R-T County Society—Delegate, Dr. Guy H. Michael, Belington.

Boone County Society—Delegate, Dr. H. H. Howell, Madison.

Brooke County Society—Delegate, Dr. S. D. Steiner, Wellsburg.

Cabell County Society—Delegates, Drs. H. E. Beard, T. G. Folsom, R. M. Wylie and W. F. Beckner, Huntington. Alternates, Drs. J. R. Cook, J. H. Moore, C. B. Wright and I. I. Hirshman, Huntington.

Central West Virginia Society—Delegates, Drs. M. T. Morison, Sutton and J. C. Huffman, Buckhannon. Alternates, Drs. E. L. Fisher, Gassaway and J. A. Rusmisell, Buckhannon.

Doddridge County Society—Delegate, Dr. A. Poole, West Union.

Eastern Panhandle Society—Delegates, Drs. G. O. Martin and Max Oates, Martinsburg. Alternates, Drs. W. L. Halton and R. B. Talbott, Martinsburg.

Fayette County Society—Delegates, Drs. W. P. Bittinger, Summerlee and R. H. Jones, Montgomery. Alternates, Drs. M. A. Moore, Longacre and G. C. Hedrick, Jr., Glen Ferris.

Greenbrier Valley Society—Delegates, Drs. Herbert Duncan, Lewisburg and A. G. Lanham, Ronceverte.

Hancock County Society—Delegate, Dr. Milton Wolpert, Chester.

Harrison County Society — Delegates, Drs. George Evans, H. H. Haynes, L. E. Neal and James Ralston, Clarksburg. Alternates, Drs. Jesse Williams, R. T. Humphries and B. S. Brake, Clarksburg.

Kanawha County Society—Delegates, Drs. W. A. Thornhill, Jr., P. A. Tuckwiller, R. Kessel, T. G. Reed, V. L. Peterson, P. H. Revercomb, M. L. Bonar, H. A. Bailey and S. L. Bivens, Charleston. Alternates, Drs. V. E. Holcombe, W. W. Point, W. L. Cooke, A. R. Stork, A. A. Shawkey, A. A. Wilson, F. A. Clark, A. P. Hudgins and R. L. Anderson, Charleston.

Lewis County Society—Delegates, Drs. E. A. Trinkle and George Snyder, Weston. Alternate, Dr. R. M. Fisher, Weston.

Logan County Society—Delegates, Drs. W. P. Hamilton and J. W. Carney, Logan; J. L. Patterson, Holden.

Marion County Society—Delegates, Drs. George Traugh, Fairmont; K. Y. Swisher, Fairview. Alternates, Drs. Joe Yost, Fairmont and E. D. Wise, Everettsville.

Marshall County Society—Delegates, Drs. H. B. Ashworth and D. B. Ealy, Moundsville.

Mason County Society—Delegate, Dr. Max Koenigsberg, Pt. Pleasant.

McDowell County Society—Delegates, Drs. N. H. Dyer, Bartley, R. V. Shanklin, Gary, and C. C. Cochran, Kimball. Alternates, Drs. C. R. Hughes, Eckman, and Altamont Bracey, Welch.

Mercer County Society—Delegates, Drs. R. O. Rogers, Bluefield; Frank Holroyd, Princeton, and B. S. Clements, Matoaka. Alternate, Dr. O. G. King, Bluefield.

Mingo County Society—Delegates, Drs. G. W. Easley, Williamson; J. E. Johnson, Stone, Kentucky. Alternates, Drs. G. B. Irvine and J. C. Gaskel, Williamson.

Monongalia County Society—Delegates, Drs. Brinley John and F. T. Scanlon, Morgantown. Alternates, Drs. G. R. Maxwell and R. R. Summers, Morgantown.

Ohio County Society—Delegates, Drs. R. B. Bailey, Howard Phillips, R. J. Reed, Jr., and R. W. Lukens, Wheeling. Alternates, Drs. Earl Phillips, G. W. Abersold, S. W. Tretheway, Wheeling, and Glen McCoy, Elm Grove.

Potomac Valley Society—Delegates, Drs. E. A. Courrier and Thomas Bess, Keyser. Alternates, Drs. R. W. Love, Moorefield and V. L. Dyer, Petersburg.

Parkersburg Academy—Delegates, Drs. A. C. Woofter, T. L. Harris and W. D. Tillson, Parkersburg, and Richard Hamilton, St. Marys. Alternates, Drs. A. R. Lutz, A. M. Dearman and Charles Goodhand, Parkersburg.

Preston County Society—Delegates, Drs. H. C. Miller, Eglon, and C. E. Smith, Terra Alta. Alternates, Drs. David Sauer, Kingwood, and R. C. Edson, Hopemont.

Raleigh County Society—Delegates, Drs. L. M. Halloran, Beckley; E. B. Wray, Stotesbury, and A. G. Bowles, Glen White. Alternates, Drs. D. C. Ashton and C. A. Smith, Beckley, and S. A. Ford, Edwight.

Summers County Society—Delegate, Dr. D. W. Ritter, Hinton.

Taylor County Society—Delegate, Dr. Harold Noble, Grafton.

Wetzel County Society—Delegates, Drs. F. E. Martin, New Martinsville, and B. F. Matheny, Hundred. Alternates, Drs. E. C. Blum and J. O. Theiss, New Martinsville.

Wyoming County Society—Delegate, Dr. J. F. Biggart, Mullens.

CONVENTION ANNOUNCEMENTS

HOUSE OF DELEGATES

The House of Delegates will meet in the ballroom of the Daniel Boone Hotel. The first meeting of the House of Delegates will be held at 3:00 o'clock on Monday afternoon, May 12, 1941. The second meeting for the election of officers will be held immediately following the President's Address on Tuesday evening, May 13.

COUNCIL MEETING

The Association Council will meet at the Daniel Boone Hotel at 8:30 o'clock on Sunday evening, May 11. The place for this meeting will be announced in the printed program.

SPECIAL LUNCHEONS AND DINNERS

Southeastern Surgical Congress: The West Virginia Fellows of the Southeastern Surgical Congress will hold a dinner at the Daniel Boone Hotel at 6:00 o'clock on Monday evening, May 12.

Industrial Physicians and Surgeons will hold a luncheon in the clubroom of the Daniel Boone Hotel at 1:00 o'clock on Monday evening, May 12.

Fellows of the American College of Physicians will hold a luncheon at the Daniel Boone Hotel at 1:00 o'clock on Tuesday, May 13.

Past Presidents' dinner, Kanawha Country Club, at 6:00 o'clock on Tuesday evening, May 13. Dr. Rome H. Walker, Charleston, host.

Publication Committee, WEST VIRGINIA MEDICAL JOURNAL, dinner at 6:30 o'clock on Sunday evening, May 11, at Edgewood Country Club. Dr. Grattan G. Irwin, Charleston, host.

Medical College of Virginia alumni, luncheon at 1:00 o'clock on Wednesday, May 14, in the Daniel Boone Hotel.

SOCIAL FEATURES

Association members and their wives will be guests of Dr. and Mrs. William P. Black at a dance at the Edgewood Country Club on Monday evening, May 12, from 10:00 until 1:00 o'clock. Dress optional.

The Kanawha Medical Society will be host to the members and wives at a night club dance on Tuesday evening, May 13, the place to be announced later.

The annual Association banquet and dance will be held on Wednesday evening, May 14, at the Daniel Boone Hotel.

THE GOLF TOURNAMENT

The annual golf tournament will be held on Monday, May 12, at 2:00 o'clock p. m.

The tournament will be played over the 18-hole course of the Kanawha County Club below South Charleston.

The club may be reached by proceeding on U. S. Route No. 60 through South Charleston. Leave Route 60 by left turn at the four radio towers in lower South Charleston and proceed straight on this road to the C. and O. tracks, at which point the entrance gate to the club grounds may be seen to the right of the crossing.

Luncheon will be served at the club for golfers at 12:45 o'clock. There will be no charge for this luncheon. So that the luncheon may be better planned, all who expect to participate are requested to notify the chairman by mail.

The greens fee will be one dollar. The caddy fee is one dollar. These fees are to be paid by the participants in the tournament. There will be no other fee or expense.

Summer rules will prevail.

Prizes: There will be prizes for all types of players. In addition to the Kloman Cup, donated through the courtesy of Mr. William C. Kloman of the Kloman Instrument Company, Washington, D. C. and Charleston, there will be about 12 other prizes. As many of these prizes will be hidden ones, each participant is requested to record all strokes accurately and to record the number of putts on each hole. Cards must be turned in, properly identifying the player, at the close of the round. This is most important.

Blind Bogey: The blind bogey will be 70 to 80 strokes. Each participant may choose his own handicap.

All prizes will be awarded Monday evening at Dr. Black's party at the Edgewood Country Club.

All golfing members of the Association are cordially invited and urged to participate in the tournament. The golfing chairman is Dr. Archer A. Wilson, Atlas Building, Charleston.

AUXILIARY GOLF

The Woman's Auxiliary golf tournament will be held at the Edgewood Country Club, Charleston, on Monday, May 12. Play will begin at 9:00 o'clock a. m. and continue throughout the day. The greens fee will be one dollar. Suitable prizes will be awarded the winners.

TENNIS TOURNEY

Tennis! The convention tennis tournament will start at 2:00 o'clock on Sunday afternoon, May 11, at the Charleston Tennis Club. All Association members in good standing are eligible to enter. There will be both singles and doubles matches. Doctors interested in entering the tennis tournament should get in touch with Dr. Spencer L. Bivens, 315 Medical Arts Building, Charleston.

COMMERCIAL EXHIBITORS

Aloe, A. S. Company, St. Louis, Missouri.

Borden Company, New York, N. Y.

Coca-Cola Company, Atlanta, Georgia.

Fischer, H. G. & Company, Chicago, Illinois.

General Electric X-Ray Corporation, Chicago, Illinois.

Kelley-Koett Manufacturing Co., Covington, Kentucky.

Kloman Instrument Company, Charleston, West Virginia.

Lederle Laboratories, Pittsburgh, Pennsylvania.
Lilly, Eli and Company, Indianapolis, Indiana.
Mead Johnson & Company, Evansville, Indiana.
Petrolagar Laboratories, Inc., Chicago, Illinois.
Powers and Anderson, Richmond, Virginia.
Schering Corporation, Bloomfield, New Jersey.
Van Pelt and Brown, Inc., Richmond, Virginia.
Westinghouse Electric and Mfg. Company, Pittsburgh, Pennsylvania.
Wocher, Max & Son Company, Cincinnati, Ohio.
Wyeth, John & Brother, Inc., Philadelphia, Pennsylvania.

PAST PRESIDENTS

Date	*Place of Meeting*	*Name*
1867	Fairmont	W. J. Bates*
1867	Wheeling	John Frissell*
1868	Grafton	John Frissell*
1869	Clarksburg	H. W. Brock*
1870	Parkersburg	J. W. Ramsey*
1871	Martinsburg	W. J. Bland*
1872	Wheeling	J. M. Lazzell*
1873	Parkersburg	R. H. Cummins*
1874	Morgantown	M. S. Hall*
1875	Point Pleasant	M. Campbell*
1876	Wheeling	A. R. Barbee*
1877	Clarksburg	E. A. Hildreth, Sr.*
1878	Weston	J. W. McSherry*
1879	Martinsburg	W. H. Sharp*
1880	Parkersburg	W. M. Dent*
1881	Wheeling	W. F. Van Kirk*
1882	Wheeling	J. E. Reeves*
1883	Grafton	B. W. Allen*
1884	Clarksburg	A. Gerstell*
1885	Weston	George Baird*
1886	Charleston	T. A. Harris*
1887	White Sulphur Springs	S. L. Jepson*
1888	Huntington	L. S. Brock*
1889	White Sulphur Springs	L. D. Wilson*
1890	Wheeling	S. H. Austin*
1891	Fairmont	S. H. Brownfield*
1892	Clarksburg	C. Shriver*
1893	Parkersburg	D. P. Morgan*
1894	Berkeley Springs	R. W. Hazlett*
1895	Davis	D. Mayer*
1896	Wheeling	J. A. Campbell*
1897	Charleston	N. D. Baker*
1898	Martinsburg	C. E. Ulrich*
1899	Weston	J. L. Dickey*
1900	Morgantown	C. S. Hoffman*
1901	Grafton	A. H. Thayer*
1902	Parkersburg	G. A. Aschman*
1903	Charleston	H. B. Stout*
1904	Fairmont	T. L. Barber*
1905	Wheeling	T. M. Hood
1906	Webster Springs	S. S. Wade*
1907	Huntington	W. W. Golden*
1908	Clarksburg	F. Howell*
1909	Elkins	V. T. Churchman
1910	Parkersburg	T. W. Moore
1911	White Sulphur Springs	C. A. Wingerter
1912	Webster Springs	C. O. Henry
1913	Charleston	F. L. Hupp*
1914	Bluefield	R. E. Vening*
1915	Huntington	H. P. Linsz*
1916	Wheeling	A. P. Butt*
1917	Fairmont	J. E. Rader*
1918	Martinsburg	Sam Holroyd
1919	Clarksburg	Robt. J. Reed
1920	Parkersburg	H. R. Johnson
1921	Charleston	J. H. Anderson
1922	Huntington	Geo. A. MacQueen*
1923	Beckley	John N. Simpson
1924	Wheeling	R. A. Ashworth
1925	Bluefield	Geo. D. Jeffers
1926	Morgantown	James R. Bloss
1927	White Sulphur Springs	C. R. Ogden
1928	Fairmont	C. A. Ray*
1929	Martinsburg	H. M. Hall*
1930	White Sulphur Springs	W. E. Vest
1931	Clarksburg	C. H. Maxwell
1932	Parkersburg	Albert H. Hoge
1933	Charleston	D. A. MacGregor
1934	Huntington	Roy Ben Miller
1935	Wheeling	Rome H. Walker
1936	Fairmont	Charles G. Morgan
1937	Clarksburg	W. S. Fulton*
1938	White Sulphur Springs	C. W. Waddell
1939	White Sulphur Springs	Ray M. Bobbitt
1940	White Sulphur Springs	Frank V. Langfitt
1941	Charleston	Robert King Buford

* Deceased.

Clean the Teeth

For maximum effectiveness, teeth should be brushed directly after meals, *Hygeia, The Health Magazine* points out. Scientific reports indicate that the conversion of refined carbohydrates to acids through action of bacteria in the mouth may be surprisingly rapid. Certain soft deposits which later harden to form the substance known as calculus also are more easily removed directly after meals than at a later time.

. . . PROGRAM . . .

Seventeenth Annual Meeting

WOMAN'S AUXILIARY TO THE WEST VIRGINIA STATE MEDICAL ASSOCIATION

HEADQUARTERS—DANIEL BOONE HOTEL

Charleston, May 12, 13, 14, 1941

HOSTESS

WOMAN'S AUXILIARY TO THE KANAWHA MEDICAL SOCIETY

MONDAY, MAY 12

2:00 p. m.—Registration ..... Mezzanine

4:00 p. m.—Executive Board Meeting. . Sunroom
Presiding—Mrs. H. V. Thomas

8:00 p. m.—Open meeting. Municipal Auditorium
Speaker—Morris Fishbein, M.D.

10:00 p. m.—Dance. . . . Edgewood Country Club
Hosts—Dr. and Mrs. W. P. Black

TUESDAY, MAY 13

9:30 a. m.—Formal Opening of Convention—Sunroom

Presiding. . . . . Mrs. H. V. Thomas

Invocation—Reverend Joseph C. Hoffman, Christ Methodist Church, Charleston.

Address of Welcome. . . . . Mrs. Ray Kessel

Response. . . . . Mrs. Harvey M. Andrew

Reports of Convention Committees:

General Chairman. . . . . Mrs. S. S. Hall

Kanawha Auxiliary Chairman—Mrs. M. F. Petersen.

Credentials and Registration—Mrs. M. I. Mendeloff.

Rules of Procedure. . . . . Mrs. C. R. Davisson

Roll Call.

Reports of Officers.

President's Message.

Reports of Standing Committees.

Reports of Special Committees.

Announcements.

In Memoriam. . . . . Mrs. J. Frank Williams, Jr.

Adjournment.

1:00 p. m.—Luncheon. . . . . Ruffner Hotel
Presiding—Mrs. H. V. Thomas

Guest Speaker—Morris Fishbein, M.D., Editor of the *Journal of the American Medical Association.*

Guests—R. K. Buford, M.D., President of the West Virginia State Medical Association; J. R. Bloss, M.D., Huntington; George F. Evans, M.D., Clarksburg; Russell C. Bond, M.D., Wheeling; W. A. McMillan, M.D., Charleston; Hu C. Myers, M.D., Philippi, members of the State Advisory Council; Mr. Joe W. Savage, Executive Secretary; P. A. Tuckwiller, M.D., President, Kanawha Medical Society.

3:30 p. m.—Tea. . . . . Executive Mansion

5:00 p. m.—All doctors' wives will be guests of the Kanawha Auxiliary.

8:00 p. m.—Open meeting of the West Virginia State Medical Association. . . . . Shrine Mosque

WEDNESDAY, MAY 14

8:00 a. m. . . . . Past Presidents' Breakfast
Hostess—Mrs. V. E. Holcombe

9:30 a. m.—General Session. . . . . Sunroom

Presiding. . . . . Mrs. H. V. Thomas

Invocation. . . . . Mrs. A. A. Shawkey

Minutes. . . . . Mrs. Harry E. Beard

Credentials and Registration. Mrs. M. I. Mendeloff

Roll Call.

Treasurer's Report. . . . . Mrs. Harold P. Evans

Report of Budget Committee. . . . Mrs. J. E. Page

Courtesy Resolutions. . . . . Mrs. Newton DuPuy

Reports of County Presidents.

Announcements.

Report of Nominating Committee—Mrs. A. H. Stevens.

Election of Officers.

Installation of Officers. . . . . Mrs. S. C. Red

Acceptance of Gavel. . . . . Mrs. Welch England

Adjournment.

1:00 p. m.—Luncheon. Edgewood Country Club
Presiding—Mrs. H. V. Thomas

Guest Speakers—Mrs. Samuel Clark Red, Houston, Founder of National Auxiliary; Mrs. V. E. Holcombe, Charleston, President of National Auxiliary; Mrs. M. I. Mendeloff, Charleston, National Corresponding Secretary.

3:00 p. m.—Postconvention Board Meeting—Edgewood Country Club.
Presiding—Mrs. Welch England

7:00 p. m.—Annual Convention Dinner and Dance.

CONVENTION NOTES

Your convention chairman, the local Committee on Arrangements and the members of the Auxiliary to the Kanawha Medical Society extend a warm, friendly welcome to you and hope your visit to Charleston will be most enjoyable.

1. All meetings and functions will be held at the Daniel Boone Hotel unless otherwise stated,

and will begin at the hour indicated. Please be prompt.

2. You are urged to visit the exhibits on the mezzanine. They present a vital picture of the work being done by county auxiliaries.

3. The registration desk will open on Monday afternoon at two o'clock on the mezzanine. Please register as soon as possible after arrival.

Rules of Procedure

1. Badges should be worn by the voting body during the general sessions.

2. To gain recognition, the speaker is to rise, address the chair, give her name and auxiliary.

3. No speaker from the floor may talk more than twice on the same subject and is limited to two minutes each time.

4. Officers and chairmen of standing and special committees shall be limited to five minutes.

5. County presidents shall be limited to three minutes.

6. All visitors are asked to register. Visitors are welcome at the general sessions, but should set apart from the voting body.

7. Whispered conversations retard the business of a meeting. Pages will pass notes when necessary.

Collect

Keep us, O God, from pettiness; let us be large in thought, in deed. Let us be done with fault-finding and leave off self-seeking. May we put away all pretense and meet each other face to face without self-pity and without prejudice.

May we never be hasty in judgment and always generous. Let us take time for all things; make us grow calm, serene, gentle. Teach us to put into action our better impulses, straight-forward and unafraid.

Grant that we may realize it is the little things that create differences; that in the big things of life we are as one. And may we strive to touch and to know the great common woman's heart of us all, and O, Lord God, let us not forget to be kind!

—Mary Stewart, of Colorado.

Past Presidents

Mrs. A. G. Rutherford.....Huntington
Mrs. B. S. Preston.....Charleston
Mrs. R. V. Shanklin.....Gary
Mrs. J. P. Lilly*.....Charleston
Mrs. Walter Swann.....Huntington

*Deceased.

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FRACTURES & TRAUMATIC SURGERY—Two Weeks Intensive Course starting June 30th. Informal Course every week.

GYNECOLOGY—Two Weeks Intensive Course starting June 16th and October 20th. Clinical, Diagnostic and Didactic Course every week.

OBSTETRICS—Two Weeks Personal Course starting May 26th. Two Weeks Intensive Course starting October 6th. Informal Course every week.

OTOLARYNGOLOGY—Two Weeks Intensive Course starting September 8th. Informal and Personal Courses every week.

OPHTHALMOLOGY—Two Weeks Intensive Course starting September 22nd. Informal Course every week.

ROENTGENOLOGY—Courses in X-ray Interpretation, Fluoroscopy, Deep X-ray Therapy every week.

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Mrs. V. E. Holcombe.....Charleston

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W. A. McMillan, M.D.....Charleston

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President-elect.....Mrs. Welch England
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1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph., Gon. & Ven. Dis., 23, 201 (March), 1939.

A complete technique of treatment and literature will be sent upon request

*Silver Picrate is a definite crystalline compound of silver and picric acid. It is available in the form of crystals and soluble trituration for the preparation of solutions, suppositories, water-soluble jelly, and powder for vaginal insufflation.

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Mrs. Ray Kessel, Charleston.....Kanawha
Mrs. C. R. Davisson, Weston.....Lewis
Mrs. V. A. Deason, Logan.....Logan
Mrs. C. L. Parks, Fairmont.....Marion
Mrs. C. B. Chapman, Welch.....McDowell
Mrs. C. S. Bickel, Wheeling.....Ohio
Mrs. Newton DuPuy, Beckley.....Raleigh
Mrs. H. A. Giltner, Parkersburg.....Wood

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Kanawha Auxiliary Chairman.Mrs. M. F. Petersen
Bulletin.....Mrs. Philip Preiser
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Information.....Mrs. P. A. Tuckwiller
Luncheons—Tuesday.....Mrs. Francis Clark
Luncheons—Wednesday..Mrs. Vernon Peterson
Past Presidents' Breakfast..Mrs. V. E. Holcombe
Publicity.....Mrs. A. A. Seletz
Tea—Executive Mansion.....Mrs. R. K. Buford
Transportation.....Mrs. R. H. Walker

Skin Rash From Dextrin

Two cases of a skin rash due to the dextrin used as an adhesive on tax stamps are reported by J. D. Walters, M.D., and E. C. Stern, M.D., Cleveland, in *The Journal of the American Medical Association* for April 5.

The two patients affixed the stamps by hand to packaged goods. They both recovered quickly when long sleeved garments were used at work, when the containers of the water for moistening the stamps were washed frequently and when the hands and cloths used to wipe away excess moisture from the stamped goods were rinsed frequently in running water.

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County Society News

Cabell County

The regular monthly meeting of the Cabell County Medical Society was held at the Veterans' Hospital on the evening of April 10 with a fine attendance. The program was in charge of Dr. P. R. Copeland, chief medical officer. Dinner was served in the main dining room at 6:30 o'clock, followed by a conducted tour of the hospital buildings and grounds.

At 8:30 o'clock the following scientific program was presented:

Dr. J. A. Kennedy, chief of the surgical service, presented a case of acute pellagra with dementia, following surgical intervention for gastric pathology.

Dr. S. S. Carlson, orthopedist at the hospital, spoke on "Procaine Infiltration Therapy in Low Back Pain and Sciatic Neuritis."

Dr. Benjamin Mil'er, pathologist, presented and discussed a number of interesting röentgenograms.

Advances in the diagnosis and treatment of pulmonary tuberculosis was discussed by Dr. I. I. Gellman, chief of the general medical service.

COLE D. GENGE, *Secretary*.

Central West Virginia

The quarterly meeting of the Central West Virginia Medical Society was held at the Richwood

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H. W. VENABLE, M. D., Consultant

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Phone Anchorage 143

Northern Methodist Church at Richwood on the evening of April 3 with a good attendance. Dinner was served at 6:30 o'clock.

Guest speakers of the evening were Dr. R. H. Walker, Dr. F. B. Carlson, and Dr. J. Ross Hunter of Charleston. Dr. Walker talked on "Cancer of the Colon and Rectum." Dr. Carlson discussed "Cancer of the Uterus." Dr. Hunter spoke on "Cancer of the Breast." This was a most interesting and profitable symposium.

A. B. BOWYER, *Secretary*.

Fayette County

The Fayette County Medical Society held its regular monthly meeting at Oak Hill at the Hotel Hill on March 25, 1941, at 8:00 o'clock. Dr. J. N. Reeves, Oak Hill, presented "Some of the Surgical Aspects of Thyroid Disease."

Following this address, Dr. J. W. Crosson, director of the Bureau of Industrial Hygiene of the State Health Department, gave a short talk on "Industrial Hygiene and the Practicing Physician."

GILBERT A. DANIEL, *Secretary*.

Greenbrier Valley

The third annual meeting of the Greenbrier Interstate Medical and Surgical Society was held at the Greenbrier Hotel, White Sulphur Springs, on the evening of April 3, 1941.

A highly interesting and diversified scientific program was presented. Dr. H. B. Mulholland of the University of Virginia opened the program with a discourse on "Modern Concepts in the Treatment of Diabetes Mellitus." Next Dr. Dean Cole of Richmond gave a very practical paper on "Pneumonia." The scientific program was concluded with an address by Dr. J. Morrison Hutcheson of Richmond on "Acute Spontaneous Pneumothorax Simulating Coronary Thrombosis."

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The society is composed of members of the Greenbrier Valley Medical Society of West Virginia and the Bath County and Allegheny County Medical Societies of Virginia.

Hancock County

Dr. G. L. Beaumont of New Cumberland is the 1941 president of the Hancock County Medical Society, with Dr. Milton Wolpert of Chester as secretary. Dr. Mullen of the Mercy Hospital in Pittsburgh addressed the society on February 11. He gave a very interesting talk on "Coronary Heart Disease."

On March 4, Dr. Carl Bickel of Wheeling gave an excellent talk on the subject, "Leucorrhea" which was of practical use to all the members.

MILTON WOLPERT, *Secretary*.

Due to the convention program being printed in this issue, some county society items were omitted. These will be included in the June JOURNAL.

TUBERCULOSIS ABSTRACTS

(Continued from page 223)

there was a greater number of cases in the orange and vitamin groups showing a favorable hematinic effect, the average loss or gain was not sufficient to record by any laboratory means over the whole course of treatment.

An empirical method of calculation revealed also that there was little change röentgenologically between the composite figures of the three groups.

As to the clinical results, the weight gain or loss is the only factor that gives any precise information that can be tabulated. The patients remaining to the end who were not molested in some way by treatment or other interferences were compared in the table.

Of 23 patients remaining on orange, 10 (43.4 per cent) gained weight, two (8.7 per cent) were stationary and 11 (47.9 per cent) lost. In the vitamin group only seven (30.4 per cent) gained;

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HARRISON	Richard V. Lynch, Meadowbrook	L. E. Neal, Clarksburg
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MINGO	W. H. Price, Chattaroy	G. W. Easley, Williamson
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nine (39.2 per cent) were stationary and seven (30.4 per cent) lost. Of the controls four (28.5 per cent) gained, four (28.5 per cent) were stationary, and six (42.0 per cent) lost, respectively. The net result from this particular analysis reveals a similarity of all three groups.

A significant fact, however, was that the control groups were more difficult to maintain than the treated groups. That is, certain unsaturated patients of the controls died more quickly, or were otherwise forced to discontinue the treatment, than in the groups saturated from the beginning with vitamin C. Of the cases "carried" for more than three months, but not for six months, there were two deaths in the vitamin group, three in the orange group (average 2.5) and seven in the control group.

Two more mass experiments were carried out in slightly earlier cases. There was no essential difference in the final result.

The authors' conclusions include the following:

The observations justify the tentative recommendation that no patient should have less than the optimum standard dosage of 0.84 mg. per kilogram of body weight a day (50 to 60 mg. total) and that the quantity of the vitamin should be increased to 200 mg. a day progressively with the severity, activity and duration of the disease.

It was found that in saturation there was roughly five mg. of vitamin C per hundred grams of total body tissue, which would represent a total quantity of three to five gm. in the normal body. Without supplementary administration of vitamin C this quantity is dissipated in advanced tuberculosis before death, sometimes to a negligible quantity.

Frequently when the disease is far advanced, patients deficient in vitamin C are benefited by being kept saturated with the vitamin, as shown by a prolongation of life of the treated patients over the controls, as well as slightly more favorable clinical and laboratory observations. Adequate vitamin C is therefore just one of the many factors necessary for a proper treatment of tuberculosis.

No benefit was noted in an excess beyond saturation.

The Body Economy of Vitamin C in Health and Disease, by Henry C. Sweany, M.D., Charlotte Louise Clancy, M.D., Molly H. Radford, M.D., and Viola Hunter, M.Sc., Jour. of Amer. Med. Assn., February 8, 1941.

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THE PHYSICIAN IN THE CHANGING ORDER*

(President's Annual Address)

By ROBERT K. BUFORD, M. D.
Charleston, West Virginia

THE privilege to lead this outstanding and important group of American physicians is indeed an honor. I deeply appreciate the confidence and trust you have placed in me in making me your president and shall always treasure the memory. Our acquaintance should ripen into helpful friendship, and our discussions prove fruitful and stimulating. We realize that the interchange of ideas and thoughts is of untold value to us. A wonderful friendliness and good fellowship exist among our members.

The persistence of these annual gatherings emphasizes the inevitable conclusion that there must be something of value in the concept. Whatever of worth there may be in the spirit of personal fraternity which results from the coming together of large groups, the motivating power of organization represents a force which is of inestimable value to any such assembly. A successful convention in itself is a product of a vast amount of organization. The best of them are planned a year or several years in advance. A smooth working program of well-conducted features may seem to the average listener as merely the outgrowth of extemporaneous genius but unless there is a plan behind it, any session may find itself on the brink of chaos.

The rank and file man in attendance may have similar reactions, but this convention will have missed its mark if it has not impressed him deeply with the essential need of preserving and building up his profession and his organization.

Today the world around is engaged in a fateful struggle—a struggle with the forces of despotism and reaction. All the fruits of more than a century and a half of effort to develop the democratic way of life are at this

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*The annual Presidential Address delivered to the West Virginia State Medical Association at Charleston, May 13, 1941.

moment in deadly jeopardy. Once again the autocrats, the tyrants and the dictators seek to ride roughshod over the liberties and freedom of millions of people. They proclaim an ancient doctrine in modern terms—men are but means to ends, not ends in themselves; citizens are just slaves of the state, minions of dictators, pawns in a national power game. These proponents of totalitarianism arraign democracy as decadent, inefficient, muddle-headed and soft. They profane the ancient virtues, scorn our ethical and humanitarian traditions. Mindful of the perils without, and of the problems within our land, we reaffirm as a great country our faith in democracy, pledge ourselves anew to lift high its banner, if need be to man its ramparts, convinced that democracy is worth defending with our lives, our fortunes, and our sacred honor.

NATION OF BUILDERS

This occasion brings to mind with renewed forcefulness my heartfelt gratitude for my American citizenship. It has indeed become a privilege to live in a nation of builders, where one finds its leaders, statesmen, professional and business men gathered to discuss means of increasing the happiness and prosperity of its individuals and enterprises rather than means of destroying those fundamentals of American life.

I pray that our interests as a nation will continue to center on construction, and that the destruction across the ocean from us may soon cease.

It is indeed a pleasure to participate in this meeting, to learn the plans, problems and programs of you who are contributing in such great measure to the progress of the United States.

"It is hardly an exaggeration to summarize the history of four hundred years", said President A. Lawrence Lowell of Harvard University, "by saying that the leading idea of a conquering nation in relation to the conquered was in 1600 to change their religion; in 1700 to change their laws; in 1800 to change their trade and in 1900 to change their drainage. May we not say that on the prow of the conquering ship in these four hundred years, first stood the priest, then the lawyer, then the merchant, and finally the physician."

The medical profession has done more for the race than has ever before been accomplished by any other body of men. These gifts to the people have come in the form of vaccination, sanitation, anesthesia, aseptic surgery, the science of bacteriology and the art of therapeutics.

Like a team of two horses slowly pulling a heavy load out of the mire, the family physician and the specialist are, side by side, slowly but surely liberating the human race from the depths of disease. Their combined value cannot be measured in dollars and cents but rather in years of additional life. Together they constitute the greatest team on earth.

To our members and guests we say that we trust that you will find much to stimulate your interest and to improve your individual methods. We hope that your contact with various minds and with newer methods you will return to give better care to your patients and thus, without going beyond your proper fields, enlarge the scope of your practice through enriched diagnostic and therapeutic methods.

PROGRESS NOT AUTOMATIC

Progress is not automatic. The world grows better because there are high-minded souls who wish that it should, and because they will and dare to take the right steps to make it better. This is what the American Medical Association has been doing for years and is continuing to do for the benefit of the medical profession and to those it is our pleasure to serve.

As our civilization becomes more complex the different duties of citizenship become less plain, but not the less binding. In earlier and simpler stages of social growth these different duties are very plain. Thus, in colonial life, where the common welfare depends upon every man's doing each his part, there can be

no question as to the respective public duties of the carpenter, the lawyer and the physician.

In the struggling outposts of civilization it is not allowable for any one to shirk his share of public work; nor can any waste of power be afforded. Accordingly the carpenter is expected to direct the building of the stockade, and the lawyer must give part of his time to the shaping of the public statutes. Nor can there be any doubt as regards the nature of the physician's public duties. Plainly he must give to the community the benefit of his special knowledge in matters of public hygiene, and he must also take professional care of all who are dependent upon public support.

PHYSICIAN'S ADVICE

This, in the present age, means that the physician must give his best advice about the water supply and about the disposal of sewage and garbage; that he must also give attention to the educational interests of the colony—not only guarding the healthfulness of the school children, but seeing that some of them are being fitted to be his assistants and successors, and even more plainly it means that he must lead the fight against all contagion and infection, and that he must plan a hospital and devote himself to its management.

As the community, which we are now imagining, grows larger, and as many physicians follow the footsteps of the individual pioneers, these special duties of citizenship do not rest upon all the members of the profession at one and the same time, but may very properly be borne in turn. And further on in the growth of the community these extra-professional duties may be specialized and thus divided among the increasing number of physicians.

Still later in the process of development only a few of the whole number of the physicians may be needed in the public service, and then there naturally results a loss of individual responsibility for any share of the public duties that rest upon the profession as a whole.

But there can never come a time in the advance of a republic when any profession can be released from the obligation of public service. Most especially is this true of our profession.

How fitting then it is on this occasion, when we meet together for renewed inspiration in our life work, that we should consider these extra-professional duties. Let us at least look them in the face. And let us see in what ways existing conditions might be improved by a larger devotion on the part of physicians to the public service.

Bearing in mind that the physician's public duty comprises those functions of government for which his education and experience have especially fitted him, and which cannot so well be performed by the laity, we find these functions dividing naturally into three classes:

1. The direction of educational processes, so far as the physical welfare of the public scholars is concerned, and also so far as special education is carried into any part of the wide domains of our profession.

2. The care of the physical well-being of all, either temporary or permanent wards of the town or state.

3. The legislation and administration necessary in eliminating all infections and contagious diseases.

HYGIENE IN THE SCHOOLS

True, leadership is likely to carry the physician into local politics where the scholar is not always welcome, but where least welcome the most needed. After thorough acquaintance with the actual condition of the schools in his district, and with the best conditions elsewhere, it is the physician's duty to persuade the school committee, if possible, of the necessity of improving the hygiene of the school. This failing, then he must reform the school committee, and this means that he himself must be willing to serve on that committee, caring neither for any threatened unpopularity at the polls nor for any hostile criticism of his best endeavors. Public service is generally thankless, and it is to no easy

enjoyment that the high duty of citizenship invites us.

In founding and in carrying on hospitals it would naturally be thought that physicians would be leaders. Physicians know best how rapidly modern surgery advances where hospital facilities exist; they know how effective isolation wards are in fighting epidemics, and they know best the blessings that the hospital affords for the otherwise homeless sick and injured.

The greatest advance ever made in medical science has been made during this century in making possible the prevention of many of our most dreaded diseases. Indeed, it may almost be thought that sanitation is a new science quite distinct from the science of medicine. But in reality there is no such separation, and the prevention of disease will always be a special department of our profession.

There is no sense in the separation that exists today between the physicians in active practice and their brothers in the laboratories. Theory and practice must always go hand in hand if either is to be of greatest use. The bacteriologist, if he gives not half his heart to the widest clinical application of his knowledge, will loose his highest inspiration. And the busy practitioner who aspires to the highest fullfillment of his mission must now keep in touch with the searchers in the world of germs.

HEALTH BOARDS

The common meeting ground for bacteriologists, for physicians and surgeons can be found in hospital work and also in the work of health boards. Where the community has been properly taught the importance of public sanitary work, such work has been cheerfully supported. And yet, in spite of the provisions that in the larger towns one member of the health board shall be a physician, so negligent have we become of our extra-professional duties, that in many towns it has been almost impossible to persuade any physician to service on the board of health, and in many other towns only second-rate men undertake such service. The best physicians say they have not the time, or they shun the notoriety and the possible unpopularity. As a necessary result the local health board too often lacks the confidence of the public and the cooperation of the medical profession.

Under monarchial governments we might petition the king and his councillors for medical reforms. But in a republic, reforms originate not in professional petitions, but in popular demands. The people are willing to be persuaded, and must be persuaded before they undertake reforms. Direct responsibility, therefore, rests upon those who alone are able to lead such movements.

REPRESENTATIVE GOVERNMENT

In the evolution of this country we have not yet attained the condition of a perfectly representative government. And it is only in the higher development of this grand policy that our national hopes safely rest. Geographical sections may be represented, and voting districts may already be numerically equal, even political parties may be justly represented, and real representative government requires also that each class and profession and trade shall be represented. Such government, so far as our profession is concerned, can easily be obtained by concerted action. And one of the functions of the state societies ought to be the nominating of our representative for public service in those departments where the help of our profession is needed. Such nominations would have the binding force that honor always imposes. And the physician's public service would be far easier if undertaken at the request of his professional brethren.

But it is not enough that we strive merely to secure the election of our professional representatives. It is even more important that we shall take a greater interest in the public work. One of the sections of our annual meeting might very profitably be devoted to sanitary science. Public measures that especially concern the medical profession should be discussed, and our opinions as physicians should be made known at the proper times,

that is, in the formative stages of legislation when such opinions may be of some use.

The three great needs are, first, an individual recognition of our responsibilities for extra-professional or public service; second, concerted effort to secure proper professional representation in the government, and, third, a continued interest in the public service of our fellows for their encouragement and support.

Shall we prove ourselves worthy of our inheritance? In times of peace and prosperity shall we begrudge giving some small portion of our time to public service. Rather, as we return to our routine responsibilities, shall we not also willingly assume our extra-professional obligations?

TASK OF DOCTORS

I plead in behalf of anxious parents, who would give their all to insure the health of their children, but who do not know as you know, in what ways this might be done. I plead in behalf of the distressed, for whom the public would gladly do more if only that way were pointed out. And, finally, I plead in behalf of generations yet unborn, that this dear land of ours shall be more jealously preserved from contamination, in order that it may be the healthful home for succeeding generations.

Society needs more and more the beneficient and uplifting influences of an expanded, scientific health service, motivated by altruism and a sincere desire to improve mankind. Rene Descartes, the great French philosopher, said three centuries ago in words that are very applicable today: "If ever the human race is lifted to its highest practicable level intellectually, morally and physically, the science of medicine will perform that service."

Fortunately, the possibilities of investigation and of discovery are not confined to a few great men. Every patient is more or less a problem. In the healing arts, more than in any other vocation that I know, the rank and file (if they have a background of basic scientific education) are constantly stimulated by their experiences to suggest new ideas and almost every practitioner occasionally makes some new observation or develops some useful idea in practice.

Twenty years ago the trend toward specialization went unchecked. Today, that trend is subject to a growing discipline. Back in 1916, ophthalmology was already a full-fledged specialty. Not so clearly defined, however, was the status of its practitioners. A yardstick was needed. It materialized with the organization in that year of the American Board of Ophthalmology, an examining body whose recognition gave qualified eye specialists a new standing.

Specialism continued to boom. One by one, similar boards sprang up; fourteen specialties now have adopted this means of self-definition and regulation. All are integrated under the Advisory Board for Medical Specialties.

For the 16,000 physicians listed as diplomates of the fourteen boards, appearance of this volume is an event of obvious importance. It makes available the authoritative "Who's Who" in the specialties to colleagues, hospitals, libraries and the general public. Its description of the boards' purposes will advance the argument among the public that certification has become the hallmark of dependability.

To the self-styled specialist, however, sincere and well qualified, the directory has an even deeper significance. It is a bell-like warning. It indicates how closely medicine may approximate that ideal state where the only specialists to gain the rewards of professional favor and public acceptance will be those whose superior qualifications are a matter of record.

NECESSITY OF REGULATION

Although it is true that a license to practice, while conferring the statutory right upon the physician to perform any services embraced within the legal definition of the practice of medicine and surgery, has not qualified that licensee to act in any other capacity than that of general practitioner, and certainly does not

endow him with the special knowledge and skill required of the specialist.

Freedom of action which contravenes the rights of others is no longer liberty. The state owes to its citizens the duty to protect them from ignorance and incompetence masquerading as medical skill. Health and life itself, our most treasured possessions, must be safeguarded, even at the expense of denying by statutory restrictions the freedom of every individual, trained or otherwise, to practice medicine and certain other professions. If this is conceded, it follows that the state in the fulfillment of this obligation must satisfy itself beyond a shadow of doubt of the knowledge, skill and character of those whom it endorses and whose ability it guarantees. Those who clamor so loudly for liberty should never forget that in the training of lawyers, dentists and doctors the public has a paramount interest. The medical profession cannot fail to take cognizance of the rising tide of criticism against the so-called "self-anointed", insufficiently trained specialists, and the pseudospecialists.

CONSERVATIVE MEDICAL POLICIES

Left to the course of events, years may pass before this glaring fault in our system of medical education is corrected. Medical policies are extremely conservative. It took seventy years before the American Medical Association won its fight to drive out the proprietory medical schools which all admitted were a blot on education.

The time has now arrived when the medical schools should grant the graduate a degree of medicine which entitles him to apply to the State Board of Medical Examiners for a license to practice general medicine only, and the law should provide that only those who have been certified by the National Board of a particular specialty can apply for a license to practice that specialty.

I believe that it is the duty of this society to go on record as favoring the divorcement of general medical practice from the practice of a specialty. Such a change in medical licensure is bound to come, forced by bad results in obstetrics, gynecology, and surgery in the hands of those with inadequate study, training and experience.

It is our problem to insure to the people the medical attendance it deserves, at terms it can afford, and in a way that a self-respecting citizen, not desiring, nor needing charity, can accept. This social evolution can be controlled. Without prejudice, with full consideration of all schemes or proposals, we can, by rendering efficient service to the public, by more nearly equalizing costs of medical care, and by promoting the general health of the public, keep this evolution from becoming a revolution, with worse conditions resulting.

How fortunate that the state cannot at this time afford to consummate state medicine. Some of our younger men would sell their birthright for a mess of pottage! State medicine would become a political racket, tax-paid, and the public would have no choice of physician or treatment.

With an oversupply of doctors, the political dictators would make terms to suit themselves. Brains, family, church, political, fraternal or even social pull would receive the cream; the others, skimmed milk or nothing.

In earlier times the chief activities of a medical society were scientific and social. Today, a different situation exists. Now the whole world seems involved in a maze of doubt, uncertainty, and dissatisfaction. Economically, politically, socially and scientifically, we are in a state of unrest.

STATE CONTROL

One of the major dangers facing medicine today is state control. Our own experience shows that government has been remarkably penurious in providing medical care for those on the WPA rolls, or the blind or dependent children or the decrepit recipients of old age assistance who above all others require generous amounts of medical service.

In the face of this deplorable situation, it is most startling and incongruous to read the plans of the various handsome young men in

Washington, who are endeavoring to make their name and fame by concentrating their efforts on putting over a great new national health program, including public health work, hospital building and health insurance! "Absurd", you say? Not at all. These modern glamour boys are deadly serious in their emulation of Bismarck and Lloyd George, and therefore the whole scheme is dangerous—perilous to the health of the people and to the thread of democracy in our land. The plan of socialized medicine known as Senator Wagner's National Health Program has not its roots in the democratic principles which have made this country great. The answer to the nation's health needs does not lie in a Fascistic philosophy which like poison gas, spreads and injures and kills all and everything in its ever widening path.

SUCCESS OF PRESENT SYSTEM

Ambition should not be fed on the health of our people. Further, government must assume its rightful responsibility for the care of those on the welfare rolls but there must be a line beyond which government must not step without usurping personal responsibility.

Schemes for the better distribution of competent medical care have of late occupied prominence in the public eye. Most of these have been based upon revolutionary concepts; many have subsequently floundered on this shoal. The ideal plan for medical help for all the population has not yet been conceived. Perhaps one day experimentation of the intelligent sort, free from acrimony, divorced from politics, may point the way. To date unbiased judgment must decide that the time-tried methods of private, individualized American medicine is far and away the best system yet devised. It isn't just coincidence that a free, untrammeled American system of medicine, has, during the short life of this republic, increased the life expectancy of its citizens from 35 years to 62 years.

The American Medical Association has never been unmindful of the necessity of constructive changes in the methods of organizing medical care or in the appropriate functions of the government in protecting the health of the people. At its first meeting in 1847 it urged the establishment of "state medicine" a term which was used at that time to describe what later became known as public health. The organized medical profession has always used its influence for the establishment and proper administration of state and local health departments. It has been more than sixty years since the American Medical Association first advocated the establishment of a National Department of Health, with its head a member of the cabinet. For many years the Association endeavored to secure the coordination of federal health activities through such a department and the 1938 special session of the House of Delegates again recommended the establishment of a federal health department with a secretary who shall be a doctor of medicine and a member of the president's cabinet.

The National Health Conference was called in Washington on July 18-20, 1938 to consider the National Health Program. This program which was presented with little opportunity for thorough or dispassionate discussion or modification was based largely on a survey conducted by the United States Public Health Service through the use of WPA clients. The accuracy of many of the basic conclusions of this survey is open to strong suspicion.

THOROUGH STUDY NEEDED

Instead of presenting an unfounded opposition to schemes of compulsory sickness insurance, the American Medical Association has given to such schemes more study, over a longer period, than the individuals or institutions that advocate such systems of insurance. This study, which has covered all existing systems throughout the world, has led to the conclusion that any scheme by which medical service is treated as a commodity that can be purchased wholesale by governmental or lay organizations and distributed at retail to patients results in a superficial service that not only delays the conquest of disease but actually increases some forms of sickness and

has not been shown to be as helpful as other methods in reducing mortality.

Those who talk so glibly of making over this profession of ours—this profession rich in traditions; this profession which has attained such noble worth; this profession surfeited by kindness and sympathy; this profession whose only passwords are Mercy and Pity—lost sight of the art of medicine. They would, by a stroke of the pen, destroy this almost divine principle; they would reduce all these human attributes of kindness, pity and mercy, to a formula. They would put the matter on a business basis under the assumption that only scientific medicine need be applied to the sick in order to effect a cure. What an abysmal misunderstanding of the principles involved. What gross injustice and what cruel denial would result, to many, many personalities. The art of medicine and its application must remain unchanged. Nothing must make unheard those words so often expressed by the sick: "Doctor, I'm so glad you have come." There is wrapped up in that one sentence the epitome of the medical art which has existed through the centuries. It is akin to the child who reaches out his hands to his mother and finds solace and understanding in her arms.

ART UNCHANGED

The art of medicine has not changed. The passwords of mercy and pity, are the same today as in the days of Hippocrates and the doctor of the old school. These qualities of the human soul must not die if the art is to exist. Would you have me suppose that they can be reduced to a business formula? Would you have me think that they can be turned on and off by a switch? I call you to witness, that this can no more be done without debasing the quality than one can stifle the love in the human breast for its creator, without dwarfing the soul.

We have been called ungenerous, mercenary, illiberal and selfish. If to teach the principles of sanitation and hygiene; if to broadcast rules and programs of maintaining health; if to give freely the discoveries of science resulting in the eradication of suffering and disease; if refusal to patent new remedies or to keep them hidden and secret; if to maintain clinics and hospital wards without recompense; if to apply knowledge of preventive medicine to the wiping out of specific diseases; if constantly to diminish our private practice and business by the dissemination of all this knowledge—if all this be ungenerous, then, thank God, I belong to such a selfish group!

It would take divine wisdom to foresee the future but it only requires common sense to keep constantly before ourselves, before the public and before our legislators the necessity of maintaining unsullied whatever is noble and worthy of the medical art. The only guide we have for the future is experience. Experience is largely the record of our mistakes. Lord Byron said: "The best prophet of the future is the past." There is ample evidence in events of the past of the deterioration of medicine under political influence. There has been no particular dissatisfaction of the public with the present type of medical service.

AN AMERICAN INSTITUTION

When the physicians in the United States become, if they ever should, mere robots of a huge national compulsory system of medical care, making diagnoses from card indexes and mechanical gadgets and prescribing treatment from prepared and numbered labels, and when patients become a mere collection of interesting human parts to be shunted from one corner to another of a medical repair ship for some heartless and pseudoscientific tinkering, America will have lost one of its greatest institutions—free and independent medicine—and the American people will have lost some of their most valuable human traits, namely, confidence in, respect for, and reliance on the scientific men and women who protect their health and prolong their lives.

It is up to the medical profession of this country, the organized medical profession as represented by the county and state medical societies and the American Medical Associa-

tion, to conduct the necessary education of our people as to what is the right kind of medical care, as to the importance of good medical care for human happiness, as to the importance of medical costs in the family budget in relationship to the costs for all of these other luxuries of life which have come to be for many of the American people necessities. If the American people are properly educated they will realize that medical care is so intimate a matter for the average man and for his family, so important a matter in relationship to their lives and to their happiness, that they will want to decide that matter for themselves in each instance and not to have it decided for them by bureaucracies, by foundations, by social workers, or by any other system.

I have been happy to bring you these remarks because in the history of the development of our profession, we recognize the general pattern of progress that has marked the growth of all branches of medicine and surgery; a pattern which yesterday molded our present miracles of healing and which today is laying plans for new improvements which will startle the world tomorrow and bring a multitude of humanitarian blessings to all mankind.

More and more as we struggle for higher aims, I see the truth of what John Stuart Mill so beautifully said: "All the grand sources of human suffering are in a great degree, many of them almost entirely, conquerable by human care and effort, and though their removal is grievously slow, though a long succession of generations will perish in the breach before the conquest is completed, yet every mind sufficiently intelligent and generous to bear a part, however small and inconspicuous, will draw a noble enjoyment from the contest itself which he would not for any bribe in the form of selfish indulgence, consent to be without."

MENINGITIS DUE TO SALMONELLA SUIPESTIFER

(Case Report)

By GEORGE M. LYON, M. D. and THOMAS G. FOLSOM, M. D.
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A PATIENT with meningitis due to an unusual small motile gram negative rod was treated with sulfanilamide. The course of events is described and attention drawn to interesting aspects of the bacteriologic diagnosis, the clinical features and the chemicotherapeutic management of the case.

DESCRIPTION OF CASE

J. E. M., a white male, two and one-fourth years of age and weighing 33 pounds, was admitted to the pediatric service of Dr. Folsom on May 29, 1938.

Two weeks before admission, at his home in Branchland, West Virginia, he became suddenly ill with fever, vomiting, malaise and diarrhea. He cried with earache and complained of some aching of the back, legs and neck. There was no rash, nor was there any marked irritability. After the first two or three days there were no symptoms referable to his gastrointestinal tract. The low grade fever. The anorexia and malaise of moderate degree persisted until admission and this was accompanied by some loss of weight and diminution of physical strength. Fluid intake had been good. Stools were soft, formed after the first two or three days. There were no symptoms referable to the genitourinary tract. There had been a slight cough

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but beyond this, and a little earache at the onset, there had been no symptoms of significance definitely referable to the respiratory tract. There had never been any dyspnea, cyanosis or other evidence of cardiorespiratory distress. Cervical rigidity, hyperesthesia, persistent vomiting, etc., all signs referable to the central nervous system, were not clearly established; although the history indirectly suggested their presence and there seemed besides to have been some increased muscle tonus, and some poorly defined muscular twitchings again suggestive of irritation of the central nervous system.

PHYSICAL FINDINGS

On admission, Dr. Folsom noted that the patient was an alert male of approximately two years, not in acute distress and apparently not critically ill. The positive physical findings were marked pain and tenderness on pressure in both flanks. There were no muscular twitchings such as had been described and he was not noticeably hyperesthetic. There was some definite but slight cervical rigidity. Lumbar puncture was postponed until the urine could be examined because of the pain on pressure over the kidney regions. There was at this time nothing of significance in the upper or lower respiratory tract, ears, heart or abdomen.

On May 30, the day following admission, the voided specimen of urine contained a faint trace of albumin, three or four red blood cells and five or six pus cells to the low power field, a large amount of mucus and a large number of bacteria. No culture of the urine was made at this time. This did not seem to explain the illness. The temperature was 103° and pulse and respirations were not remarkable. Then a lumbar puncture gave a cerebrospinal fluid which was cloudy and under increased pressure. The fluid contained 1,540 cells per cubic millimeter (type not noted) and a stained smear revealed polymorphonuclear (bilolate) cells and a few gram negative bacilli. Examination of the blood revealed 3.7 million erythrocytes, 31,400 leukocytes, a hemoglobin of 9.2 gm. (59 per cent), and on a stained smear 72 per cent polymorphonuclear cells, 27 per cent lymphocytes and one per cent monocytes. The culture from the cerebrospinal fluid from the first lumbar puncture which appeared to be sterile after 72 hours incubation, eventually yielded a gram negative bacillus, possessing motility, although this latter characteristic was not reported until June 3. On the morphologic appearance of the gram negative bacilli found in the cerebrospinal fluid, a tentative diagnosis of meningitis due to the Freidlander bacillus was made and treatment therefore instituted. The interesting bacteriologic aspects of the case will be discussed later in the report.

After observing the changes in the cerebrospinal fluid (on May 30), sulfanilamide (two and one-half grains) was given every four hours with soda water (daily oral intake 15 grains). At 9:00 a. m. a cisterna puncture was followed by a lumbar puncture. With both needles in place, 50 c.c. of cloudy cerebrospinal fluid was withdrawn and 50 c.c. of one per cent sulfanilamide in physiologic saline irrigated in through the cisterna needle and out the lumbar needle. Approximately 40 to 45 c.c. of the sulfanilamide solution remained in the spinal canal. Saline hypodermoclysis was administered almost continuously.

At 9:00 p. m. of the same day, 50 c.c. of cerebrospinal fluid was withdrawn and 50 c.c. of 1.0 per cent sulfanilamide in physiologic saline injected intrathecally.

On May 31, June 1 and June 2 the same procedure was repeated each morning and each evening, and also on the morning of June 3. The daily intake of sulfanilamide had been 15 grains orally and 15 grains intrathecally.

HEMOPHILUS INFLUENZAE

On June 3, as Dr. Folsom was leaving the city for two weeks, Dr. Lyon was asked to see the patient for the first time, and the history was summarized essentially as presented. By this time there was some definite clinical improvement generally, and it was believed that the organism isolated from the cerebrospinal fluid was not a Freidlander bacillus, but instead was a hemophilus influenzæ. On this date, however, the observation of motility in the cultures of the organism isolated at the first and second lumbar punctures rendered identity not only uncertain, but made it extremely unlikely that the organism was either a Freidlander bacillus or H. influenzæ. It was agreed in any event, however, that continued intensive chemotherapy should be resorted to in hope of sterilizing the cerebrospinal fluid and overcoming the infection.

On June 4 the muscular twitchings of the patient's extremities which were described as being present before admission reappeared. He became more hyperesthetic than at anytime since admission. Because of this and the generally less satisfactory condition of the patient, sulfanilamide by mouth was increased to 3.5 grains every four hours (oral

intake 21 grains daily). At 11 a. m., 45 c.c. of cerebrospinal fluid was removed and it was more cloudy than it had been ten hours before. No sulfanilamide was given intrathecally on either June 3 or 4, in the belief that the oral administration would be adequate.

On June 5, at 9:00 a. m. 75 c.c. of cloudy cerebrospinal fluid was removed by lumbar puncture and 45 c.c. of one per cent sulfanilamide solution introduced intrathecally. At 8:00 p. m., 55 c.c. of cloudy fluid was removed, and no more sulfanilamide injected. In the belief that oral administration would be as effective as intrathecal administration, the intrathecal injection of sulfanilamide solution were again discontinued temporarily, and 3.5 grains of sulfanilamide was given orally every four hours.

PLEOMORPHIC BACILLUS

On June 6, 45 c.c. of cerebrospinal fluid was removed in the morning and 40 c.c. in the evening. Organisms were for the first time recovered from culture of the catheterized specimen of urine. It was a gram negative motile pleomorphic bacillus, morphologically and culturally similar to the organism isolated from the cerebrospinal fluid. We are inclined to believe that the organisms were there previously but were not recovered due to laboratory errors.

On June 7, after 48 hours of oral administration of sulfanilamide alone, the progress of the patient appeared to be clinically less satisfactory. During the night there had been a progressive and rather sudden change in the findings. There were many evidences of an increased irritation of the central nervous system. His left arm and leg were markedly affected, almost spastic at times, and the muscular twitchings were here more marked than on the right. There was an internal squint of the right eye. He vomited. Because of these, the intrathecal administration was again employed, and at 9:00 a. m. with one needle in the cisterna and with one in the spinal subarachnoid space, 1.0 c.c. of Dandy's neutral phthalein was introduced into the lumbar needle and recovered in just a few moments from the cisterna showing there was no obstruction between these two sites. The pressure was increased but not greatly so. It was possible to remove 15 c.c. of fluid from the cisterna and 60 c.c. from the spinal needle. Both sides were rendered as free from fluid as possible by air replacement. Following this, 50 c.c. of 1.0 per cent sulfanilamide was introduced by gravity into the lumbar needle. It was feared that the changed condition might be due to the development of an obstruction above the cisterna, probably one of the formina of Monro. At 8:00 p. m., his condition was still unchanged and he appeared even more to be suffering from some increased intracranial pressure. By lumbar puncture, 35 c.c. of fluid was removed, and as there was no increase in pressure, the fluid was slowly over a period of several minutes, removed by gentle suction. This is remarkable considering the evidences of intracranial pressure being noted. We were then most apprehensive of some obstruction to the interventricular pathways. This fluid was sterile on culture. Hypodermoclyses of saline solution were continued.

On June 8, the clinical picture was unchanged, a blood culture was taken and a culture made of a catheterized specimen of urine. No organism was recovered from the blood but from the urine was again obtained a plemorphic motile gram negative bacillus. In the morning and again in the evening, 60 c.c. of cerebrospinal fluid was withdrawn and 50 c.c. of one per cent sulfanilamide solution introduced. Hypodermoclyses were continued. An intradermal tuberculin (0.1 mgm.) was negative. Intradermal tests for b. brucella (porcine and suis) were negative. Agglutination tests of the blood for b. typhosus, b. paratyphosus A (s. parathyphi) and b. paratyphosus B (s. schottmulleri) were all negative.

INTRADERMAL TUBERCULIN TEST

On June 9, there was some slight improvement in the general clinical picture. The same intrathecal treatment was given as on the day previous. The intradermal tuberculin test (1.0 mgm.) was negative. The Wassermann reaction of the blood was negative. On culture for salmonella group of bacteria the stools were negative.

On June 10, the sulfanilamide was increased to five grains orally every four hours (daily dose 30 grains). By lumbar puncture, 45 c.c. of fluid was withdrawn and 45 c.c. of 1.0 per cent sulfanilamide given. As the patient seemed so much better, the intrathecal administration was at this time discontinued.

On June 11, the spinal drainages were discontinued, because the cerebrospinal fluid was essentially normal and had been sterile for 96 hours. This accompanied the general improvement from June 8. There was more complaint of dysuria as the patient became mentally clearer and was clinically better.

On June 12 and 13, the general improvement continued. Because of the bacilluria a blood culture was again taken but it was negative. Urine culture of June 12 again yielded a motile gram negative bacillus. No lumbar punctures were done. The patient continued to receive five grains of sulfanilamide by mouth every four hours. Urine cultures made after June 12 failed to show the presence of the gram negative bacillus. The temperature ranged from 99 to 99.6° and never exceeded that during the remainder of the stay in the hospital.

On June 17, the patient was discharged essentially well. He was beginning to gain weight, was mentally alert, and his only residuum was some loss of muscle power in his legs. This was more marked on the left. Otherwise examination on discharge was not remarkable and the patient seemed to be well established in his convalescence.

The cerebrospinal fluid changes are recorded in Chart I. Organisms were not recovered on culture after June 6.

DISCUSSION

Cultures were taken directly from the puncture needle into nutrient broth. After 48 to 72 hours a gram negative bacillus possessing motility was observed. Growth on blood agar was not greatly different from that on gelatin and plain agar, the colonies being smooth, flat, regular in outline, shiny, almost colorless and translucent. On Teague medium there was a somewhat heavier growth and the colonies were small, round, transparent and colorless. The organism fermented dextrose, maltose, mannite, rhamnose and xylose with the production of gas. It did not ferment lactose, saccharose, arabinose, salicin, trehalose or inosite. It produced blackening with lead acetate media. It did not liquify gelatin, clot milk or produce indole.

The bacilli were not agglutinated by sera which agglutinated the typhoid bacillus (eberthella typhi), the Flexner dysentery bacillus (eberthella paradysenteriæ var. Flexner), the bacillus of paratyphoid A (Salmonella paratyphi) or the bacillus of paratyphoid B (Salmonella schottmulleri Seiffert).

The bacillus has been classified at the Harriet Lane Home and at the National Institute of Health as being an atypical hemophilus influenzæ. Unfortunately, the organisms they received apparently did not possess motility. This characteristic seemed to be lost in some of our own subcultures after several transplants, although in most instances it was a regular characteristic of the organism. Motility appeared somewhat tardily in the cultures taken directly from the cerebrospinal fluid, but it must be remembered that in these, the organisms themselves grew out relatively slowly. The first and second subcultures almost regularly showed motility and likewise grew out much more rapidly than the original cultures did. In this connection, we wondered what effect the sulfanilamide might have (1) in retarding the growth of the original cultures and (2) in altering motility.

SALMONELLA GROUP

In spite of the fact that the small gram negative bacillus did not regularly satisfy all of the cultural and fermentation characteristics of salmonella suipestifer, it seemed to us, from purely bacteriologic grounds alone, that the organism belonged more nearly to the salmonella group than to any other. A considerable familiarity on our part with the hemophilus influenzæ clinically in the purulent meningitides and bacteriologically in the laboratory, has led us to a firm conviction that this organism was not an atypical strain of hemophilus influenzæ. Meningitis due to hemophilus influenzæ, even when successfully treated with sulfanilamide, as indeed we have done in three instances [1 2] does not produce a clinical picture such as we observed in this patient. Salmonella suipestifer has previously been recovered from cases somewhat similar to ours. It seems most probable that this was the organism with which we are dealing.

The finding of this motile gram negative bacillus in both the cerebrospinal fluid and in the urine is of particular interest. Broth cultures from the blood gave no certain evi-

dence of a bacillemia; although they were not taken until relatively late in the clinical course, and of course somewhat after the chemotherapy was instituted.

From the parents of the patient we learned that there had been a considerable amount of raw pork in their kitchen, most of the time, for a period of two to three weeks before the apparent onset of his illness.

In recent years there have been encountered in clinical and public health laboratories an ever increasing number of puzzling small gram negative bacilli, some motile and some non-motile, which are difficult if not indeed quite impossible to classify according to our orthodox classifications. This is rendered even more difficult when the bacteriologic diagnosis appears to be so completely out of harmony with the clinical diagnosis, as for instance, it would have been in this instance had we been forced to continue with our earlier impression that we were dealing with a hemophilus influenzæ infection.

In spite of the not entirely satisfactorily explained classification of the organism concerned, and in spite of the dissenting findings of the laboratories referred to, it seems most unlikely that we were dealing with an infection caused by an atypical hemophilus influenzæ. On the other hand, there is much reason to believe that we are dealing with a meningitis and a bacilluria caused by one of the salmonella group, and of this group, probably salmonella suipestifer (b. of hog cholera) rather than salmonella schottmulleri (b. paratyphoid B.).

SALMONELLA SUIPESTIFER

Salmonella suipestifer is today just as interesting, just as tantalizing and just as unpredictable in many if its bacteriologic and its clinicopathologic expressions as it must have been back in those days when bacteriologists, convinced of its lack of pathogenicity for man, boldly referred to it as the bacillus of hog cholera. Its admittedly generally low but variable pathogenicity for man is but one of its many interesting characteristics. In 1885 Salmon and Smith demonstrated what appeared to be a close relationship between it and hog cholera. For a time it was accepted as the causative agent of this disease in hogs. Doubt was thrown on its causal relationshpi, however, when eighteen years later DeSchweinitz and Dorset demonstrated that a filter passing virus was in all likelihood the primary causal factor. Since then this viewpoint has been generally accepted and the bacillus of hog cholera, while recognized as an important and even frequent secondary invader in hog cholera, in all likelihood has no essential relationship to the disease.

HOG CHOLERA

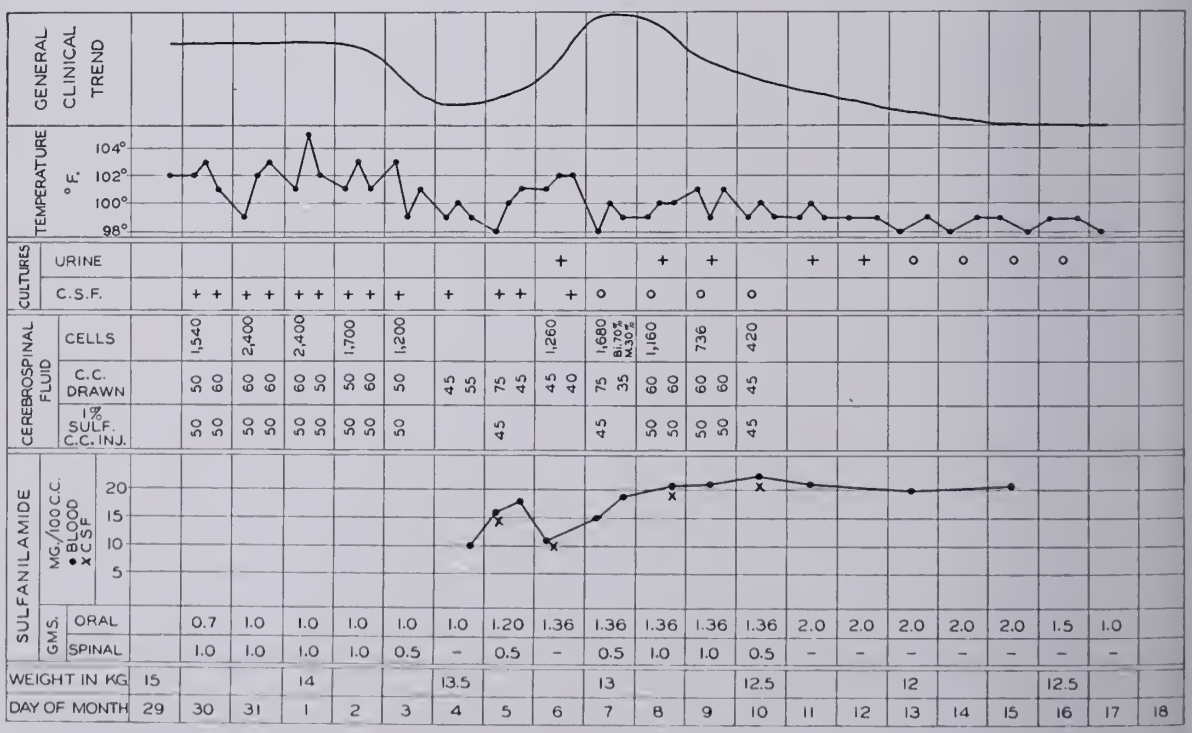
The frequent occurrence of these bacilli in hogs suffering from hog cholera, an important and widely disseminated disease of hogs, renders this animal an important medium for the dissemination of the bacilli to human beings. The extent to which hogs suffering from cholera may be butchered and taken to market is not generally appreciated. While interstate shipment of such hogs is generally quite restricted by means of inspection service, home killed or locally butchered hogs are generally not subjected to such critical inspection.

It is not at all unlikely that human infection with this organism is far more widespread than has been realized due to its frequently mild and often completely unrecognized clinical course in man. Salmonella suipestifer infections in human beings vary considerably in their clinical characteristics. In some instances, the picture is simply that of a short-lived, self-limited course of typical food poisoning. In other instances, the clinical picture is that of a typhoid-like illness, at times accompanied by septicemia, pyoarthritis, pneumonia, meningitis, et cetera. As such, the severity varies from an unrecognized or mild inapparent infection to that of a severe, at times quickly fatal form. There is no clear-cut distinction as to the relationship of the organisms isolated from these two widely different clinical pictures. They may be identical organisms, or may indeed be even fur-

ther subdivisions of the same curious salmonella group. By some, it is believed that they are caused by strains which are at least serologically different. This is doubtful.

Salmonella suipestifer infections in man appear to occur relatively infrequently or else we fail to recognize them. The young seem to be more frequently affected than the older, probably more regularly exposed, individuals. While in the young the infections are believed to be most commonly mild, the most severe form is also encountered in the very young. The age of our patient, two and one-fourth years, is of interest in connection with the matter of susceptibility of the individual and the clinical form of the infection as it may occur in different age groups. It is amazing that with all the salmonella contaminated pork which has been sold and taken into the kitchens of our homes in a raw state, that there have been so relatively few cases of illness traceable to salmonella suipestifer as a causative agent. This can best be explained on the basis of (1) its low pathogenicity for man, and (2) our failure to suspect the real causal agent. It is more than likely that the apparent increase in the reported incidence and recognition of the human infection is due, not to an actually increased incidence of the disease, but instead to a more accurate recognition, perhaps even in the face of an actually decreasing incidence. More careful bacteriologic study of the gram negative bacilli encountered clinically would probably show a larger incidence of these infections than is generally recognized.

Just what rôle the sulfanilamide played in the management and recovery of this patient is not clear. It is, indeed, quite possible that the patient may have recovered spontaneously without the sulfanilamide. On the other hand, it is our impression that the chemical was directly responsible for the recovery. We also believe that relatively high blood and cerebrospinal fluid levels were required because the patient did better clinically on higher levels (18 to 24 mg./100 c.c.) than on lower levels (12 to 18 mg./100 c.c.). He did better on combined oral and intrathecal administration (June 1-3 and June 7-10) than on oral alone (June 4-6). At no time were there any significant evidences of toxicity



other than a grayish discoloration of the skin. The clinical course and related data are graphically presented in the accompanying chart.

SUMMARY

We know of no similar instance in which a meningitis and a bacilluria, caused by a similar motile gram negative bacillus was so treated with sulfanilamide. For this reason, we have described our own interesting experience.

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THE DIAGNOSIS AND TREATMENT OF HYPERTHYROIDISM *

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ACTIVE hyperthyroidism in a young adult is perhaps the most readily recognized physiological disorder known. A glance at the patient cannot fail to suggest the true nature of the disease. On the other hand, in patients in advanced years with low grade hyperthyroidism and in patients with goiters complicated by other medical problems, such as diabetes, tuberculosis, or organic heart disease, the diagnosis may tax to the utmost all available clinical and laboratory facilities.

Any infectious processes, and especially the more chronic types of infection such as tuberculosis and undulant fever, may simulate hyperthyroidism. There is a tendency to tachycardia, loss of weight, nervousness and fatigue. In borderline cases of suspected hyperthyroidism, all possibilities of chronic infection should be eliminated before treatment of the suspected hyperthyroidism is begun.

DIAGNOSIS

The rate of metabolic activity is consistently increased in hyperthyroidism. To a large extent the symptoms of hyperthyroidism depend upon this increase in the metabolic rate. This implies an increase in the amount of oxidation that the body must perform day and night, at work or at rest. The increase in oxdiation necessitates an increase of material to oxidize, an increase in oxygen intake, and a speeding up of the oxygen distributing mechanism. Therefore, in hyperthyroidism, there is an increase in the appetite, to furnish additional fuel for the increased metabolic demands. If the food intake is not stepped up in proportion to the increased demands, the body is forced to oxidize its own tissues and weight is lost rapidly.

The increased oxygen requirement of the tissues necessitates a speeding up of the circulatory mechanism. This increase can be obtained either by increasing the rate of the heart or by increasing the stroke volume of each beat. Both mechanisms generally are brought into play and are evident as tachycardia and increased pulse pressure. To increase the speed of circulation, the arterioles dilate, diminishing the peripheral resistance and lowering the diastolic blood pressure. The systolic pressure remains high as a result of the increased stroke output of each beat of the heart. The arteriolar dilatation expresses itself as a flushing and warming of the skin, and by the presence of capillary pulsations such as in the nail beds.

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Increased perspiration is present, and, as a rule, the patient complains of intolerance to heat. The hyperhidrosis has not been explained satisfactorily, but may be a compensatory mechanism adapted to disperse the heat produced by the increased metabolic rate.

METABOLIC CHANGES

Another important sign of hyperthyroidism is a fine tremor which has not been adequately explained but which may be related to metabolic changes within the muscles themselves. It is known that muscular efficiency is decreased in hyperthyroidism, and that it requires more oxygen for a patient with hyperthyroidism to do a given piece of work than for a normal person. Weakness of all the skeletal muscles is present, this being noticeably present in the quadriceps group of the thigh, the patient often being unable to raise himself on one leg to a high step.

Quite inexplicable, on the basis of our present knowledge, is the tendency for patients with hyperthyroidism to develop exophthalmos. This is more common in younger patients and in patients with diffuse goiters. The administration of the thyrotropic hormone of the pituitary gland has produced exophthalmos in animals that have been subjected to complete thyroidectomy. On the basis of this experiment, and in spite of the fact that there is no clinical or experimental evidence to indicate that the pituitary gland is involved in hyperthyroidism, some believe that exophthalmos may be the result of a pituitary overactivity.

The first apparent eye sign of hyperthyroidism is widening of the palpebral fissures. Associated with this widening is lidlag, which is best demonstrated by having the patient hold this head still and follow the vertical motions of the examiner's hand. Upon downward motion of the hand the retracted upper lid fails to cover the white of the eye above the pupil and confirms the presence of lidlag.

True measurable exophthalmos is less common than other eye signs of hyperthyroidism. It is impossible without the use of the exophthalmometer to state whether or not exophthalmos is present. If the palpebral fissures are widened, the eyes have a staring expression suggestive of exophthalmos. However, rather marked exophthalmos, particularly after operation, may be masked by the absence of widened fissures.

Nervousness and an exaggeration of all emotional reactions are almost invariably present in patients with hyperthyroidism. Crying is a very common complaint, particularly in women. A fine tremor, best observed in the outstretched hand with the fingers separated, is a characteristic and constant finding.

In the presence of severe hyperthyroidism, practically all systems of the body are affected to a greater or lesser degree. There is a diminution of gastric acidity and a tendency to hypermotility of the gastrointestinal tract. There is also a tendency toward skeletal decalcification. Menstruation may be interrupted in severe cases.

FORCEFUL TACHYCARDIA

Symptoms of hyperthyroidism referable to the circulatory system are the most constant and dependable. A forceful tachycardia with an increase of pulse pressure must be considered the result of hyperthyroidism until proved otherwise. An increased precordial thrust is a nearly constant finding in patients with hyperthyroidism and these patients almost invariably experience palpitation. It is inconceivable that any appreciable degree of hyperthyroidism could be present without exhibiting itself in stimulation of the cardiovascular system.

The thyroid itself is palpably enlarged in the great majority of the cases. Too often, however, the goiter is overlooked because of improper palpation. In short-necked heavy-muscled men a soft, diffuse, low-lying goiter may escape recognition. Similarly, an intrathoracic goiter may be so deep that it will not be palpable.

The basal metabolic rate is the most useful laboratory aid in the diagnosis of hyperthyroidism. Although there are a few cases in which the basal metabolic rate is within the normal limits of nothing to plus 15 per cent, we have never seen a patient with active hyperthyroidism untreated by iodine or roentgen therapy, whose basal metabolic rate was consistently less than no per cent. It is not improbable that the occasional patient who has active hyperthyroidism and a high normal basal metabolic rate is an individual whose basal metabolic rate prior to the development of hyperthyroidism was below the usual figures quoted as normal.

An elevation of the basal metabolic rate does not necessarily imply that hyperthyroidism is present. Leukemia may produce a striking elevation of the basal metabolism, probably as a result of the enormous activity of the bone marrow. The basal metabolic rate may be elevated to as much as plus 50 per cent in certain cases of severe essential and malignant hypertension. The cause of this elevation is not understood, but it possibly may be the result of the increased work of the heart associated with maintaining circulation in the face of a high peripheral resistance. In the presence of dyspnea secondary to cardiac decompensation, the increased work performed by the muscles of respiration results in an elevation of the basal metabolic rate.

The blood cholesterol has been found to be consistently low in patients with hyperthyroidism. A low blood cholesterol *per se* is of little or no clinical significance, because a number of conditions other than hyperthyroidism can influence its level. However, the finding of a fasting high blood cholesterol in a patient suspected of having hyperthyroidism is strong evidence against the presence of hyperthyroidism. Although a low blood cholesterol is of little positive value in proving the presence of hyperthyroidism, the finding of a high blood cholesterol is of considerable negative value in ruling out hyperthyroidism in borderline cases.

Considerable experimental and clinical investigation of the blood iodine levels in patients with hyperthyroidism has been carried out, but the findings are too irregular and inconsistent to be of great clinical value.

In the vast majority of cases the goiter is easily palpable if the patient sits with the head slightly forward, lies with the neck nearly fully extended, or best of all stands with the head held erect. If the neck is flexed, as it will be with the patient reclining on a pillow, a low-lying gland nearly always will escape palpation; if the neck is hyperextended, the tightening of the pretracheal muscles may render palpation more difficult.

DIFFERENTIAL DIAGNOSIS

Essential Hypertension: The most difficult condition to differentiate from hyperthyroidism is severe essential hypertension, particularly when the latter has entered the malignant phase. Here a moderate elevation of the basal metabolic rate is a relatively common finding. In a small percentage of the cases marked elevations of the basal metabolic rate up to plus 50 per cent may be present in the complete absence of true hyperthyroidism.

We have seen 18 cases of essential hypertension in which the basal metabolic rate was elevated to from plus 20 to plus 60 per cent. The symptoms experienced by these patients closely simulated those of patients with hyperthyroidism. An elevation of the basal metabolic rate, whether it be the result of hypertension or of thyroid activity, must of necessity stimulate the circulatory system, and must increase the demands of the body for food. So closely may hypertension simulate hyperthyroidism that it is not surprising to find several patients in this series who had had thyroidectomies performed without relief of symptoms.

In many cases of hypertension the basal metabolic rate is elevated, the history is consistent with hyperthyroidism, and the physical findings do not rule out its presence. In such cases the finding of a high or a normal blood cholesterol is strong evidence against the

presence of hyperthyroidism. In the final analysis, however, the clinical picture of the patient is the most valuable aid in determining whether a patient with hypertension has hyperthyroidism as well. It always should be remembered that thyroidectomy in the presence of hypertension will not lower the diastolic blood pressure even if true hyperthyroidism is present.

Cardiac Decompensation: The basal metabolic rate frequently is elevated in patients with dyspnea of cardiac origin. In these cases, it is often difficult to determine whether or not the cardiac decompensation is the result of a "masked" hyperthyroidism. Unless the diagnosis is perfectly clear, it is essential to recheck the basal metabolic rate after compensation has been restored by a period of bed rest and digitalization. If the basal metabolic rate remains elevated in the absence of dyspnea at rest, hyperthyroidism presumably is present.

Neurocirculatory Asthenia: The symptoms of neurocirculatory asthenia occasionally simulate hyperthyroidism so closely that thyroidectomy is performed under the mistaken belief that hyperthyroidism is present. Although nervousness, palpitation, tachycardia, and tremor are present in neurocirculatory asthenia, the physical findings and the basal metabolic rate should facilitate the differentiation of the two conditions. The symptoms of neurocirculatory asthenia are unchanged or aggravated by surgery.

Neurocirculatory asthenia is a functional disturbance characterized by its occurrence in a neurotic type of personality, by the paroxysmal nature of its symptomatology, and by the complete absence of any consistent alterations in metabolism. The tachycardia of neurocirculatory asthenia tends to disappear with bed rest; the pulse pressure is not increased, the systolic blood pressure is often low; the apex impulse of the heart is forceful only during the paroxysms of nervousness.

The circulatory manifestations of hyperthyroidism are constant rather than paroxysmal. The heart is necessarily subjected to a constant stimulation as a result of the increased metabolic demands. At bed rest in the hospital, the pulse rate of the patient with hyperthyroidism will fall slowly in response to the slow decline of the basal metabolic rate. The pulse pressure nearly always is increased and the systolic blood pressure almost invariably is a high, rather than a low normal.

The hands of the patient with neurocirculatory asthenia are almost invariably cold and moist, in sharp contrast to the warm, flushed skin of the patient with hyperthyroidism. Tremor, if present in a patient with neurocirculatory asthenia, is apt to be coarser than that seen in hyperthyroidism. The appetitie in neurocirculatory asthenia as a rule is either unchanged or diminished and significant loss of weight is absent unless the patient refuses to eat.

Psychosis: Major organic psychoses can closely simulate hyperthyroidism. We have seen patients with involutional psychosis who have had a persistent forceful tachycardia, who have lost considerable weight, and whose facial expression has closely simulated that of hyperthyroidism. This similarity of the circulatory symptoms and of the mechanism of emotional expression arises no doubt from the disorientation of the patient's mind, and from his inexpressable fear of some terrible fate evident to himself alone. In these cases the basal metabolic rate is likely to be unreliable and the diagnosis must be determined largely by clinical means.

Patients who are disoriented or delirious and who are suspected of having hyperthyroidism should not be subjected to thyroidectomy until at least two weeks after mental clarity has returned. If the psychosis is due to hyperthyroidism, the patient will be apt to have a severe or even fatal postoperative thyroid crisis. If the psychosis is not due to hyperthyroidism, operation will not help it. Patients with psychoses, therefore, are best treated by conservative measures.

Therapeutic Test With Iodine: One of the most valuable methods of determining the presence of hyperthyroidism in any of the above conditions is the therapeutic test with iodine. If a patient is suspected of having hyperthyroidism, he should be hospitalized and kept at rest in bed for a period of three days, the basal metabolic rate being determined each day. He is then discharged and given 15 minims of Lugol's solution three times daily for a period of two weeks, after which he is again admitted for a three day period and the basal metabolic rates again determined. The pulse rates and blood pressure readings of the two periods of hospitalization are compared, as are the weights of the patient and his evaluation of the severity of the symptoms. If the basal metabolic rate has fallen, if the pulse rate is consistently lower, and if there has been an appreciable gain of weight and remission of symptoms, thyroidectomy can be advised with every prospect of obtaining an excellent result.

On the other hand, if there is no subjective or objective improvement after two weeks of iodine therapy in a patient who has previously taken no iodine, it is unlikely that thyroidectomy will benefit the patient.

If the patient has been taking iodine continuously over a long period of time, and it is suspected that the hyperthyroidism is in a partial remission as a result of the iodine, the reverse of the above procedure can be used. The patient continues to take iodine during the initial hospital stay, is then discharged without iodine for a period of from three to four weeks, and an exacerbation of the symptoms and signs of hyperthyroidism confirms the presence of the disease.

TREATMENT OF HYPERTHYROIDISM

Except in special instances, hyperthyroidism should be treated by thyroidectomy. Thyroidectomy is safe, is accompanied by an extremely low morbidity and mortality, and offers the most rapid and effective means of restoring the patient to health and economic usefulness.

Roentgen Therapy: Roentgen therapy, although not recommended for use in the treatment of uncomplicated hyperthyroidism, is of value: (1) as an adjunct to surgery used in bad risk cases to prepare the patient for operation (just as ligation of the superior thyroid arteries was formerly used to effect a reduction in the severity of the hyperthyroidism), (2) as a palliative form of treatment in patients who are inoperable because of their advanced age or because of serious complications, (3) in conjunction with iodine in certain carefully selected cases of recurrent or residual hyperthyroidism.

Roentgen therapy is of little value in the treatment of hyperthyroidism associated with large adenomatous goiters. Roentgen therapy is effective in about 50 per cent of the patients with diffuse goiters, inducing a partial remission of symptoms and a significant depression of the basal metabolic rate. In the majority of these cases, however, the tachycardia and often the nervousness persist, and eventually surgery is required. For these reasons, unless strong contraindications are present, surgery offers the most rapid and the most certain means of effecting a cure.

MORTALITY RATE

The mortality rate in surgery is extremely low, less than one per cent, and is negligible in younger patients who are good surgical risks. Too often the condition of the patient will be allowed to progress from bad to worse under prolonged and futile attempts to cure the disease by röentgen therapy and conservative treatment. If it were possible to consider the failures of conservative management in which operation was delayed until surgery became dangerous, it is certain that the long run mortality rate attributable to conservative treatment would far exceed that of early surgical intervention.

Use of Iodine in Treatment of Hyperthyroidism: In certain cases when, because of old age or complicating conditions, the risk of thyroidectomy is considered to outweigh the advantages that it might give, conservative treatment with small doses of

iodine and the use of roentgen therapy is justified. Under these circumstances it is unwise to use excessively large doses of iodine over a long period of time. It has been shown histologically that large doses of iodine exert a slightly stimulating action on the thyroid epithelium. Although proof of the contention is difficult, the clinical experience of many observers indicates that too large doses of iodine administered over a long period of time, especially in patients with adenomatous glands, may result in an exacerbation of the severity of the hyperthyroidism. In this type of case, five minims of Lugol's solution given once or at most twice a day is sufficient to maintain a remission.

PHYSIOLOGICAL ACTION OF IODINE IN HYPERTHYROIDISM

When a patient with diffuse goiter and hyperthyroidism is given ioline, the hyperplastic gland fills with colloid, the pulse rate falls, the basal metabolic rate is lowered, and a remission of the hyperthyroidism is induced.

There has been much speculation and investigation as to the mechanism of this reaction, but all that is definitely known is that iodine exerts a direct action on the secretory mechanism of the thyroid gland so as to diminish its output of active thyroid hormone. This reaction appears within twenty-four hours after the administration of iodine, and its maximum effect is noted from one to three weeks after the initiation of treatment. It is during this period that thyroidectomy can be performed with the maximum safety and the minimum reaction.

Much has been written regarding the phenomenon of "iodine escape." Many are of the opinion that iodine loses its effectiveness after a few weeks of continuous administration and that patients who take iodine over long periods of time become "iodine-fast" or "iodine-tolerant" so that the drug no longer exerts any control over the hyperthyroidism. It is true that in many cases the severity of the disease progresses in spite of the administration of iodine, and that neither larger doses nor a continuation of the same doses of iodine will produce any further remission of its severity. Yet as Means and Lerman have shown, the hyperthyroidism in these so-called "iodine-fast" cases undergoes an exacerbation when iodine is withdrawn. This indicates that the continued administration of iodine exerts a continuous effect, perhaps more striking in the first few weeks, but nevertheless present so long as iodine is being given. The phenomenon of iodine escape (an exacerbation of the patient's symptoms while iodine is being given) is therefore not to be interpreted as the failure of iodine to exert a continuous depressant effect on the secretory activity of the thyroid. Rather it should be considered the result of an exacerbation of the disease itself which has occurred in spite of the iodine, and which would be more severe if the iodine were withdrawn.

Although many investigators have adopted the above point of view, there is little or no evidence that the administration of iodine will either cure a patient with hyperthyroidism or permanently modify the severity of the disease, except as it depresses the secretory activity of the thyroid during the time it is given.

SUMMARY

1. The mechanism whereby the signs and symptoms of hyperthyroidism are produced is discussed.

2. The differential diagnosis of hyperthyroidism from essential hypertension, neurocirculatory asthenia, and intrinsic cardiac disease is outlined.

3. The value of the basal metabolic rate and blood cholesterol determination is discussed.

It is concluded that both x-ray and iodine have a place in the treatment of selected cases of hyperthyroidism, but that surgery is the treatment of choice in the vast majority of cases.

Most pulsations of the head or ear are of vascular origin, although occasionally other causes, such as anemia, may be responsible, *Hygeia, The Health Magazine* states in answer to an inquiry.

ACCESSORY FACTORS CONCERNED IN THE DIAGNOSIS OF HEART DISEASE*

By CHAS. S. DUNCAN, M. D.
Huntington, West Virginia

THE marked increase in recent years of heart disease, and its high mortality has given it a sinister significance to layman and physician alike. This is bringing new and often difficult problems to the profession in passing an opinion on the heart of many patients when the organ is apparently normal and disease is suspected.

Thus, the first thing is the diagnosis between the normal and diseased heart. The decision must be clearly and emphatically made so that the anxiety of the patient may be relieved, or his manner of living changed so as to safeguard him against the hazards of the disease. If the physician cannot arrive at a definite decision because of either the lack of knowledge or the lack of diagnostic equipment, he will have far greater respect and confidence from his patient if he admits frankly that he cannot establish a definite diagnosis, than he would if he waits until some disaster makes the diagnosis for him. The physician should feel free to consult with his colleagues and always give the patient the benefit of the doubt. The science of medicine is so vast that no man can be expected to be a master in all its branches.

Cardiac diagnosis comprises both the science and art of medicine, in which the history is carefully recorded, physical findings painstakingly determined, disturbances in physiology looked for, accessory laboratory methods employed, and the results of these investigations carefully appraised. Thus, the positive evidences are patched together until the true nature of the problem is revealed. Diagnostic perfection is out of the question but conscientious truth, even though at times it may be embarrassing, is the nearest approach to perfection.

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In diagnosis the first consideration is the elicitation of an accurate history. The age of the patient is important due to the frequency of various forms of heart disease in certain age periods. The sex is an important consideration because certain forms of heart disease predominate in one or the other sex. Inquiry regarding the cause of death of ancestors is important owing to the fact that a definite hereditary tendency is present in certain cardiovascular diseases. Careful questioning regarding the possible etiologic factors is always helpful in arriving at the correct solution of the type of lesion.

Congenital heart disease usually presents a considerable problem, but when it is learned that the patient was a "blue baby" or was resuscitated with difficulty at birth, the correct diagnosis becomes apparent. Congenital heart disease usually makes its appearance earlier in life than does the other forms.

The history of an infection which conforms to the prerequisites for the diagnosis of rheumatic fever or chorea is almost conclusive evidence that the heart trouble is of rheumatic origin. However, the failure to elicit a history of rheumatic fever does not preclude the existence of rheumatic heart disease. If the patient has experienced a prolonged, severe attack of retrosternal pain there is probably a healed cardiac infarct, clearly pointing to the presence of coronary artery disease. A recent pneumonia, empyema, in-

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fluenza or some other form of infection may prove helpful in diagnosing pericarditis. The history of a chancre is often extremely valuable evidence in the identification of cardiovascular syphilis.

Next we must elicit the symptoms, time of onset, circumstances at the time of onset, and an accurate description of the course of the illness up to the time the patient comes for examination. Dyspnea, cyanosis, edema of the dependent portions of the body, and accumulation of fluid in the body cavities constitute the well-known syndrome of congestive failure, but are not characteristic of any one type of heart disease. Likewise, dyspnea on exertion is common to many forms of heart disease. However, the history of substernal pain of short duration is suggestive of disease of the coronary arteries. Dyspnea, especially at night, is also suggestive of coronary artery disease.

The physical examination of the patient should not be limited to the chest alone but should include the entire body. Much can be learned from the general inspection of the patient, noting his behavior, manner of breathing, color and facial expression.

The typical appearance of the faces of patients with heart disease is characterized by an anxious expression, by brightness of the eyes, often by fullness of the checks and frequently by cyanosis of the lips. In cases of long standing mitral stenosis, the face often shows a cyanotic flush that exaggerates the malar eminences and, on closer inspection, the skin capillaries are dilated, giving the peculiar appearance that is called "the mitral butterfly." In aortic diseases a peculiar central pallor of the face is likely to occur. Coronary thrombosis is often associated with an ashen pallor of the face, and an anxious, restless expression which results in an unnatural brightness of the eyes.

Careful observation and questioning regarding the character and type of respiration frequently offers important information. It also will rule out functional dyspnea which is never an indication of heart disease.

Engorgement of the veins of the neck and arms suggests an increased venous pressure, and is an important indication of right heart failure. Visible pulsations in peripheral arteries may reveal important information. When the wave drops abruptly, it suggests the presence of aortic insufficiency. The common forms of arrhythmia may be recognized by arterial inspection. A slow apical rate calls immediately to one's attention complete heart block.

The appearance of the hands and feet gives one valuable clue. At times clubbing of the fingers and toes occurs when passive congestion has existed for any length of time, or in congenital heart disease, or when pulmonary circulation is interfered with. It is also observed in most cases of subacute bacterial endocarditis.

IMPULSES IMPORTANT

The demonstration and interpretation of impulses and thrills felt over various portions of the thorax are useful in diagnosing certain lesions. The presence of a tracheal tug and a diastolic heave of the upper abdomen are suggestive of an aortic aneurysm. A systolic shock and presystolic thrill felt at the apex leaves little doubt regarding the presence of mitral stenosis, and the presence of a systolic thrill in the aortic area directs attention to aortic stenosis.

The art of physical diagnosis should be highly developed by all clinicians, even though mechanical aids are available. In the majority of instances, the size of the heart as determined by palpation and percussion should not vary more than one centimeter from that determined by the x-ray.

The x-ray gives the most accurate information regarding the size and contour of the heart. It likewise gives a valuable permanent record for future study. Interpretation of cardiac measurements must be appraised individually for each patient. The size of the normal heart varies according to age, sex, weight, height, and body build of the patient. Failure to appreciate this invariably leads to diagnostic errors.

Important facts may be determined by the careful study of heart sounds, and the physician must be aware of the normal heart and its normal variations. Heart sounds that are faint and distant may be early evidence of serious cardiac disease. The presence of cardiac murmurs is usually but not always positive proof of heart disease. Attention should be focused particularly on the diastolic murmur and its closely related presystolic murmur. Systolic murmurs, particularly those at the base of the heart and at the left of the sternum, often have little clinical significance. Right basal systolic murmurs when loud and transmitted are nearly always indicative of disease of the aorta or the aortic valve. The same is true of apical systolic murmurs especially when they completely replace the first sound and are transmitted into the axilla. When an apical systolic murmur or one in the left basal area is the only evidence found, the odds are against the presence of structural cardiac damage.

RHYTHM DISTURBANCES

Certain disturbances in the rhythm disclose at once the existence of heart disease. For instance, auricular fibrillation definitely establishes the presence of heart disease and may occur in any or all forms but is most common in mitral disease, hyperthyroidism, and hypertensive heart disease. It is very rarely present in syphilitic heart disease. The presence of premature contractions would in no manner establish the existence of structural cardiac changes, since they are often found when no structural change is present.

The recognition of heart disease and the identification of its type is simple when it occurs in its classic form. However, this is not always the case. More than one lesion may exist, and more than one etiologic process may be present. Here the diagnosis may become extremely complicated and require the skillful use of all methods of detection.

The electrocardiogram has become a very important diagnostic adjunct and frequently serves as a most important aid in the identification of the true nature of the underlying disease. It is almost a necessity in the final appraisal of the heart during middle and later life, particularly when the problem of coronary disease confronts the examiner.

Much of the progress that has been made in our knowledge of heart disease during recent years has resulted from the correlation of the clinical signs with the autopsy findings.

It is a well-known fact that patients who have heart disease frequently present symptoms referable to the abdomen. This is particularly true when congestive failure is present, and pain and discomfort from visceral congestion and ascites may occur. Also, in coronary disease such symptoms as pain, flatulence, and so forth, may direct attention chiefly to the abdomen. We must not be misled by these symptoms. On the other hand in addition to heart lesions, it is always possible to have gall-bladder disease, duodenal ulcer, gastric ulcer or some other systemic disease to confuse the symptoms. These things again emphasize the necessity of a complete and thorough physical examination.

Thus, cardiac diagnosis comprises the complete appraisal of the entire body, both positive and negative findings being appraised before the final solution to the problem is obtained.

Vitamin K

As a means of preventing hemorrhage, a hazard confronting practically all infants during the first few days of life, George P. Bohlender, M.D., William M. Rosenbaum, M.D., and Earl C. Sage, M.D., Omaha, advise in *The Journal of the American Medical Association* for April 19 that a vitamin K preparation be given by vein to all mothers before delivery. They say the time of administration makes no apparent difference in the results obtained because their investigations in 50 cases showed that vitamin K effectively prevents a deficiency of the clotting factor of the blood in newborn infants during the first week, regardless of the time of administration to the mother before delivery. After about the sixth day of life the clotting factor of an infant's blood becomes normal.

TWO CASES OF TIC DOULOUREUX

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THE writer is not a neurologist nor does he engage in the practice of what is termed "general medicine." His experience with the management of tic douloureux is very limited. The reason for reporting these two cases is that in one the recovery is unique as far as can be determined from an extensive inquiry among those in whose province the treatment of trifacial neuralgia lies. As for the other case it is felt that the palliative therapeusis employed may be the answer long sought for in the treatment of a most distressing and intractable condition. The writer's contact with this case is due solely to the fact that the patient is a close relative. Results from any treatment in a limited number of instances prove nothing. Certainly one swallow does not make a summer. However, after this latter patient had received practically every tried and experimental remedy known (except radical surgery) including four injections of alcohol without the slightest relief, it is startling and impressive, to say the least, to observe what at this writing (April 23) appears to be complete recovery following palliative treatment. Even in the event of a recurrence the ninety day respite has been a priceless boon to the patient.

CASE REPORTS

Case 1: In the summer of 1937 the writer attended a frank case of herpes zoster involving the three branches of the left trifacial nerve in a woman than 57 years old. Typical vesicles corresponded to the distribution of the nerve and the pain was acute. Recovery in several weeks was complete. Numerous pitted areas were left. It was incidentally discovered that this patient had suffered with tic douloureux (left) for the preceding twelve years. She described the frequent attacks as "agonizing." She had various treatments including several alcohol injections with little benefit. She refused radical surgery though strongly advised to have operative interference as the only solution. Subsequent to the attack of herpes zoster there has been a complete absence of any symptom of tic douloureux. Those who care to may hazard an explanation of this. It may be that the inflammatory process incident to herpes zoster accomplished what was hoped for with the injections of alcohol.

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Case 2: A woman of 67, history unimportant. Tic douloureux (left) since 1930; had many forms of treatment, among the more recent were cobra venom, prostigmin methylsulfate intramuscularly, prostigmin bromide by mouth and four alcohol injections of the nerve with no abatement of symptoms. Her condition was distressing, attacks of violent pain occurring frequently with and without excitants.

Beginning January 10, 1941 this patient received twelve consecutive daily doses of 60 mg. thiamin chloride intramuscularly and 15 mg. per oram t.i.d. After the fourth day paroxysms became less severe and less frequent, disappearing entirely on January 19, since which date no symptoms have returned. The oral treatment has been continued, 15 mg. t.i.d. This dose will shortly be reduced.

COMMENTS

Two cases of tic douloureux are briefly reported. In one there has been certain recovery following herpes zoster of the affected nerve; in the other there is a ninety day remission to date which may presage permanent relief. In view of this it would seem employment of thiamin chloride in cases of tic douloureux merits further trial.

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RENAL COMPLICATIONS FOLLOWING SULFAPYRIDINE AND SULFATHIAZOLE THERAPY IN PNEUMONIA

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SINCE the beginning of the use of sulfapyridine in pneumonia, many cases of microscopic hematuria have been noted and reported. Antopol reported that in a series of 40 cases with pneumococcus pneumonia receiving sulfapyridine, 16 cases or 40 per cent showed a transient microscopic hematuria.[1] By this time most of us have seen microscopic hematuria, but we rarely see gross hematuria and anuria following the administration of the drug.

Antopal and Robinson were the first investigators to report sulfapyridine calculi in monkeys, rats, and rabbits following the oral administration of large amounts of the drug. They described a simple calculous ureteritis and pyelitis which caused hematuria and in the more severe cases a pyelonephritis causing nitrogen retention in the blood.[2] The sulfapyridine stones were found to be non-opaque to x-ray and easily dissolved with distilled water.

Gross, Cooper, and Lewis also observed the sulfapyridine concretions in animals and found that the urinary stones thus formed were composed of 6.4 per cent free sulfapyridine and 64.1 per cent acetylsulfapyridine.[3]

Southworth, Hamilton, and Cooke were the first to report hematuria, nitrogen retention, and oliguria with abdominal pain resembling renal colic, in three patients receiving sulfapyridine therapy.[4] Snapper and others then reported four cases of hematuria following the use of sulfapyridine, included in which was one case that came to autopsy. In this case they found a calculus consisting largely of acetylsulfapyridine in the renal pelvis. Tomey also reported cases of sulfapyridine urolithiasis in humans.[6] Ravel and Curtis reported a case of hematuria, renal colic, and a tendency toward anuria. After stopping the sulfapyridine and forcing fluids, the convalescence was uneventful.[7] Tsao reported five cases of hematuria in children following sulfapyridine therapy, included in which was one death due to urinary obstruction with crystalline concretions of sulfapyridine and acetylsulfapyridne, demonstrated at autopsy as obstructing both ureters.[8] Carroll, Shea, and Pike reported a case of renal colic, hematuria, and complete anuria which was cured by passing ureteral catheters into the renal pelves and lavaging with warm distilled water.[9]

Plummer and McLellan then reported two cases of renal calculi after sulfapyridine therapy, one of which was proved by pyelograms and the other at autopsy.[10] Antopal also reported a case that came to autopsy in which no concretions were found but a pronounced localized non-necrotizing hemorrhagic papillitis and pyelitis with severe tubular degeneration was found. He also demonstrated the same findings in animals.[1]

Sadush, Waters and Wilson reported two more cases, one of which went to autopsy. The pathological findings in the kidneys were great tubular and capsular dilatation, marked congestion and vacuolization within the glomerular tufts, and an acute hemorrhagic pyeloureteritis extending into the adjacent renal medullary tissue.

On summarizing the cases above reported,

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is it noted that the time of appearance of the renal colic and hematuria varied from eight hours (in children) to five days, the average being about two to three days after the sulfapyridine was started.

The amount of sulfapyridine given did not seem to have any bearing on the appearance of renal symptoms. From 3.3 grams in children to 55 grams in adults were given.

The laboratory findings were not consistent in these cases. The amount of free sulfapyridine in the urine varied from 0.97 mg. to 120 mg. and the total sulfapyridine from .069 mg. to 325 mg. The non-protein nitrogen was as low as 36 mg. in some cases and in the more severe oligurias and anurias it was as high as 165 mg. In the majority of cases reported the non-protein nitrogen was not high. The urine findings were albumin one plus to four plus, rather high specific gravity, two to innumerable red blood cells per high power field, and rarely were casts found. After sulfapyridine the urine usually was acid in reaction. In a few cases in which sodium bicarbonate was administered with the sulfapyridine, the urine remained alkaline. In children in which the doses were small, the urine remained alkaline in three of the five cases reported.

SULFAPYRIDINE CRYSTALS

In eight cases in which the urine was examined for sulfapyridine crystals, they were found in only four. Several descriptions have been given to these crystals. Some call them "arrow-shaped" colorless crystals.[11] Others describe them as "broken up bundles of long-pointed wedge-shaped, sometimes notched, colorless crystals"; still others state they resemble uric acid crystals, and others tyrosine; others, "bundles of wheat."

The crystals I have seen have been in bundles of wedge-shaped colorless crystals with needle-like projections containing amorphous material.

Another observation that was recorded in two cases reported was a rise in the blood pressure; in one case from 106/70 to 130/100, and in a child the blood pressure went up to 122/92. In the case I will present the blood pressure elevated from 130/80 to 175/100 (during the anuria).

Some writers who have experimented with animals have shown that the blood pressure will usually drop during sulfapyridine therapy; however, when a bilateral ureteral block is present we would expect the blood pressure to rise.

CASE REPORT

A 68 year old white male was admitted to St. Luke's Hospital on November 17, 1940, with a history of having a cold for the past week. On November 13 he became very weak and had a severe chill followed by a high fever and coughing. When first seen in the home by Dr. H. C. Davis, his temperature was 104 degrees and a diagnosis of left lower lobar pneumonia was made. He was given sulfapyridine, grams two (30 grains) every four hours for six doses on November 14, grams one (grains 15) every four hours for four doses on November 15, and grams one (grains 15) on November 16, or a total of 17 grams (255 grains) over a period of 48 hours. On the night of November 15, he began to have severe pain in the back and over both costovertebral angles. The pain later radiated down into the right lower quadrant, simulating right ureteral colic. On November 16, in the early morning he had gross hematuria and Dr. H. C. Davis stated that he noticed a precipitation of crystals about one-quarter inch thick in the bottom of the specimen bottle. The patient did not void from 8:00 a. m. on November 16 until 8:00 p. m. on the same day, and then only 75 c.c. following 1,000 c.c. of five per cent glucose given intravenously. He was admitted on November 17, at 11:00 a. m. not having voided during the night.

The past history was essentially negative except for some shortness of breath.

On admission the temperature was 98.8 degrees, pulse 67, respiratory rate 30 per minute, and blood pressure 160 mm. of mercury systolic and 84 mm. diastolic. The patient was well developed and well nourished, weighing 300 pounds. He was acutely ill and appeared to be of the stated age. There was marked facial flushing, excessive perspiration, and but very little cyanosis. The tongue was very dry, thick, and coated. Expansion of the chest was not limited, and there was no impaired resonance. There were increased breath sounds over

the lower left chest, anteriorly, and in the axillary line. Fine moist râles were heard over both bases posteriorly. The heart was somewhat enlarged, the rhythm irregular, and no murmurs were heard. There was marked abdominal distention, and bilateral costovertebral tenderness, tenderness over the right lower quadrant and over the bladder, but no ankle edema.

A diagnosis of left lobar pneumonia was confirmed by x-ray. A KUB x-ray was negative for urinary calculi.

On admission, the urine was cloudy, acid in reaction, specific gravity 1.016, albumin four plus, and showed a few finely granular casts, two to three pus cells, and 20 to 30 red blood cells per high power field. The hemoglobin was 95 per cent, red count 4,850,000 and white count 14,650. Differential count showed polymorphonuclear neutrophiles 83 per cent and small lymphocytes 18 per cent. Blood Kahn test was negative. The patient vomited consistently and the abdominal distention increased. He was given fluids intravenously and alkalies by mouth. Diathermy was given to both flanks and enemas and pitressin to relieve the abdominal distention.

During the first twelve hours after admission the urinary output was 575 c.c. During the next 24 hours it had increased to 1,050 c.c. and after the third day it had jumped to 4,350 c.c. The non-protein nitrogen 24 hours after admission was 41 mg. per 100 c.c. The urine sulfapyridine (total) was 66.6 mg. and the blood sulfapyridine total was three mg. The urine on the same day revealed albumin four plus. Microscopic examination showed 10 to 15 red blood cells per high power field. This specimen was examined for crystals and many bundle-shaped colorless crystals with needle-like projections, containing amorphous material were found.

On November 19, the urine was still acid, contained one plus albumin and microscopically showed five red blood cells per high power field. The total sulfapyridine in the urine was 35 mg. and the non-protein nitrogen was 56.2 mg. per 100 c.c.

On November 20 the total urine sulfapyridine was negative and the non-protein nitrogen 50. The urine at this time was clear, neutral in reaction, no albumin, and contained only an occasional white blood cell per high power field. On November 23, the non-protein nitrogen was 34.8 and on discharge on November 24 the urine was normal. After the second day of hospitalization the vomiting ceased and the abdominal distention gradually subsided. The blood pressure on admission was 160/84. On November 19 during the anuria it was 175/95. His blood pressure at the onset of his present illness on November 16, was 135/85. After being home for two days his blood pressure dropped to 140/80 and has remained there up to this date. His urine is now normal except for a few white blood cells and he has fully recovered from both the pneumonia and the sulfapyridine anuria, but he does have slight ankle edema.

DISCUSSION

The above case is one of precipitation of sulfapyridine crystals in the urinary tract causing ureteral obstruction producing anuria and gross hematuria. It shows that when this happens the crystals can be dissolved by forcing fluids. Cystoscopy was contemplated several times in the case, but I hesitated, knowing that this man was within the prostate age and that cystoscopy might start a urinary infection, and might have brought on more nitrogen retention.

The conditions under which sulfapyridine hematuria and calculi develop are still not clear, but it is believed that the hematuria is caused by the mechanical irritation of the crystals. Acidity of the urine has been suggested as a factor and the administration of alkalies have been recommended. However, this procedure has been shown to be of little value both experimentally and clinically[8, 6] because sulfapyridine calculi have formed in alkaline urine, and a urine with a ph of 7.9 is not enough to be of therapeutic value.[12]

It has also been shown experimentally by Toomey that sulfapyridine concretions will form even in the presence of adequate urinary output so the amount of fluid given to the patient seems to have little bearing on the formation. These two phases need to be investigated thoroughly, and until they have been worked out I believe we should give alkalies and force fluids in all cases receiving sulfapyridine.

It is now recognized that similar complications can arise in the course of sulfathiazole therapy. Gross and Cooper have demon-

strated calculi in the urinary tracts of rats receiving sulfathiazole.[13] Pepper and Horack reported a case of hematuria and oliguria following sulfathiazole and at autopsy urinary concretions were found in the kidneys.[14] Arnett added a case of renal colic, hematuria and anuria which received only 14 gm. of sulfathiazole with an equal amount of sodium bicarbonate. He noted crystals which were dumbbell, rosette and chestnut burr-shaped in the urine.[15] Garvin later reported two cases of hematuria and oliguria and crystals were found in the urine. Both recovered after fluids were administered. He also stated that crystals of the drug in the urine were much more frequent after sulfathiazole than after sulfapyridine therapy probably due to the fact that sulfathiazole is excreted much more rapidly by the kidneys.[16]

CASE REPORT

P. S. B., a white man aged 76, entered St. Luke's Hospital, December 18, 1940 with acute appendicitis. He was operated upon under spinal anesthesia shortly after admission by Dr. C. M. Scott and a gangrenous appendix found. On December 20 a left lower lobar pneumonia developed and the patient received 20 grams (300 grains) sulfathiazole over a period of 72 hours. The temperature became normal in 48 hours and improvement was noted. On December 21 and December 22 the blood level of sulfathiazole was five mg. and three mg. per 100 c.c. respectively. The urine, normal on admission, showed many crystals and red blood cells on December 23.

Alkalies were administered and fluids forced during the next 24 hours, despite an intake of 4,000 c.c. by vein and by mouth, the patient voided only 250 c.c. of urine which on microscopic examination contained crystals of the drug and blood.

The patient appeared drowsy and there was tenderness in both costovertebral angles as well as abdominal distention. The non-protein nitrogen which on admission was 35 mg. per 100 c.c. was 64.2 mg.

Not until two days later did the patient begin to void larger amounts of urine but thereafter improvement was constant. The blood and crystals disappeared from the urine and the non-protein nitrogen fell to normal and the patient made an uneventful recovery.

The fact that sulfathiazole is excreted much more rapidly than sulfapyridine emphsizes the importance of maintaining a sufficiently high fluid intake to prevent crystal formation in the urine when sulfathiazole is prescribed.

SUMMARY

A case of gross hematuria, renal colic, and anuria lasting 36 hours due to sulfapyridine therapy has been presented. Merely forcing fluids was sufficient to bring about a cure in this case.

A second case of hematuria and anuria due to sulfathiazole which responded to the same therapy has been mentioned.

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Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

Dust swept under the sofa disturbs no one—until it is discovered; nor does tuberculosis hidden from public view. It is well to be reminded that more than five per cent of the people who die of tuberculosis annually in the United States die in mental hospitals. Scant attention has been paid to this sector of the problem for which reason an article on tuberculosis in mental hospitals commands the attention of health workers, hospital authorities and physicians. Abstracts of the article follow:

Tuberculosis in Mental Hospitals

The Peoria (Ill.) State Hospital, with an average daily census of 2,575 patients, has had a tuberculosis division since 1905. X-ray examination of the 56 patients assigned to it showed that 16 per cent had no tuberculosis. Thus, of the resident patients in the hospital at the beginning of the survery, only 47 (1.87 per cent) were known to have tuberculosis.

From the beginning of the survey it was obligatory to take a chest röentgenogram on all patients who were transferred to the infirmaries, irrespective of whether tuberculosis was suspected or not. In the course of the study there were surveyed 2,156 patients in residence, 766 newly admitted patients and 477 employees. Tuberculin tests of these groups (all but about four per cent were tested with tuberculin) showed positive reactions in 94.6 per cent of resident patients, 80.6 per cent of receiving-ward patients and 57.3 per cent of the employees. Parenchymal lesions were revealed by x-ray in 11.2 per cent of resident patients, 7.4 per cent of receiving-ward patients and 1.6 per cent of employees. The majority of the resident patients and less than one-half of the receiving-ward patients were over 50 years old. The great majority of employees were under 50 years of age.

The percentage of the tuberculous increased with the length of stay of the patients. Of the tuberculous employees, one-half developed the disease after five years of service.

About 10 per cent of the tuberculous patients in the receiving wards were committed from tuberculosis sanatoria and about 14 per cent were known to have tuberculosis at the time of admission. The remaining 5.7 per cent were discovered in the course of the survey.

This study bears out what has been found in other studies, namely, that when the physical examination alone is depended upon, tuberculosis is at times diagnosed when it does not exist and overlooked at others even in the terminal stage. One investigator found that 38 per cent of the patients on the tuberculosis wards had no tuberculosis. In another hospital for mental diseases, two undiagnosed cases were found in 50 autopsies.

The different infection rates in the three groups can be attributed to the different age groups, and the high percentage of positive reactors among the resident patients chiefly to advanced age. It should be considered also that patients in this study come largely from the low income group in which infection and morbidity rates are known to be high.

The significant difference in the percentage of tuberculosis among resident (11.2 per cent) and receiving-ward (5.7 per cent) patients indicates that many of the patients develop tuberculosis while they reside in the institution.

"The rationale of spending money on tuberculosis prevention among the psychotics, who already represent a tremendous burden on society, was seriously questioned by some authorities in the course of our study. The fact, however, that 6.9 per cent of our tuberculous patients have already been discharged or paroled by January 1, 1940, shows that some of these patients have an opportunity to spread their disease in their own family and community after they return home. The possibility of the spread of the disease from these patients to the employees has also to be considered seriously. For these reasons the money spent on tuberculosis prevention must be considered as a prudent investment on the part of hospital authorities."

The treatment of the tuberculous psychotic differs in no way from that of the mentally normal, namely, rest. The chief aim of treatment is to convert the sputum and, therefore, collapse therapy is used even if the patient's mental condition seems to be entirely hopeless. Patients under shock therapy deserve special consideration—3.2 per cent of such patients developed tuberculosis either during the course or after the treatment.***

Tuberculosis in Mental Hospitals, M. Pollak, M.D., et al., Amer. Rev. of Tuber., March, 1941.

President's Page

While the writer, through local pride, is no doubt biased, the Charleston meeting appeared to me to be an outstanding success. The program, thanks to Dr. Bob Wilkinson and his Scientific Committee, was unusually outstanding. The entertainment, thanks to the host society, was all that could be hoped for. The camaraderie and fellowship, thanks to the rank and file of our Association members, left nothing to be desired.

In January of this year I began on this monthly page a discussion of voluntary prepayment sickness insurance. Each succeeding month this discussion has been renewed. Probably as a result of this discussion, an unofficial insurance referendum of Association members was conducted and the necessary machinery for formulating a definite plan was submitted to the House of Delegates. At the second meeting of the House of Delegates no one objected when the plan was withdrawn.

To me, the discussion which followed the insurance report of the Medical Service Committee was one of the high points of the Charleston meeting. W. J. Burns, executive secretary of the Michigan State Medical Association, was present and answered questions about the Michigan plan for approximately an hour. This question and answer period had an educational benefit of great value to the Association. While it was apparent that the delegates were not enthusiastic about adopting an immediate plan for West Virginia, their questions indicated that most of the delegates were uninstructed, that they were keeping open minds, and that they were eager for information. When Dr. Fishbein cautioned the Association about going slow, the sentiment in the House of Delegates crystallized to what I might call a policy of "watchful waiting." The plan presented by the Medical Service Committee was "received", and there the matter ended.

Before finally leaving this subject of voluntary sickness insurance, which I shall do after this issue, I wish to pay tribute to Dr. D. A. MacGregor and the Medical Service Committee for a fine bit of work. Theirs was not a thankless job, even though the program they presented was not adopted. Their long trips and many days of hard work made possible the study and enlightenment of our membership on a problem of vital importance to us all.

And now may I congratulate the Association upon its fine wisdom in the selection of next year's president. Dr. Rogers is one of the state's leading internists and an outstanding business executive. He has been a loyal Association worker for many years and has a thorough understanding of the problems of organized medicine in this state. During the remainder of my own term of office I plan to work toward a better and stronger organization of the medical profession of West Virginia so that Dr. Rogers may have an efficiently working group when he takes office next January first.

Robt. C. Burford

President.

West Virginia Medical Journal

Atlas Building
P. O. Box 787
CHARLESTON, WEST VIRGINIA

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Publication Committee

WALTER E. VEST, M. D., Editor ..... Huntington
EDWARD J. VAN LIERE, M. D. ..... Morgantown
W. M. SHEPPE, M. D. ..... Wheeling
G. G. IRWIN, M. D. ..... Charleston
JAMES R. BLOSS, M. D., Editor Emeritus ..... Huntington
J. C. HUTCHINSON, M. D. ..... Welch

•

Business Manager

Mr. JOE W. SAVAGE ..... Charleston

THE CHARLESTON MEETING

The JOURNAL feels fairly safe in saying that the seventy-fourth annual meeting in Charleston on May 12-14, 1941, was one of the most successful in all the Association's history. On many previous occasions we have had excellent scientific programs, fine exhibits, gay parties and genial fellowship but seldom if ever has there been such a satisfactory combination of all these phases as there was at Charleston. We speak for the entire Association when we extend congratulations and express gratitude to the Kanawha Medical Society members and their fine ladies for a history-making session.

President-elect R. O. Rogers, M. D.

In extending encomiums to the host society, we also wish to pay tribute to our Association president, Dr. Robert King Buford, for the part he played in the Charleston meeting. It was Dr. Buford who conceived and promoted the public meeting at Charleston's new municipal auditorium where on the opening night of the convention Dr. Fishbein spoke to approximately two thousand capital city residents. This meeting, which took the public behind the scenes of scientific medicine, is just the sort of thing we need to promote public confidence in the medical profession. We hope Dr. Buford's idea will become an annual affair.

On the evening of May 13, the House of Delegates elected Dr. R. O. Rogers of Bluefield to the presidency to serve during 1942. There are few men better qualified by training and experience to head the Association than Dr. Rogers. He is not only recognized as an outstanding business executive but he has faithfully served the Association in many different capacities during the past 15 years and is entirely familiar with the economic problems confronting the medical profession. Dr. Rogers has never failed to respond when called upon for service. We are sure he will successfully carry on the fine work now being done by Dr. Buford.

Most of the convention transactions are published in this issue of the JOURNAL. We hope all Association members will read these transactions, particularly the reports of the various Association committees. Much excellent work has been done this past year for organized medicine in West Virginia, but few doctors can appreciate the extent of Association activities unless they read the transactions and reports.

It is quite likely that the minutes of the two meetings of the House of Delegates will not be transcribed in time for publication in the June number. If that is the case, the minutes will be published in the July issue. All other transactions are published herein.

ABOLISH THE SECTIONS?

Much interest and speculation has been in evidence as a result of the action of the surgical group at the Charleston meeting in voting to abolish their sectional assembly. Without any advance preparation or warning, the surgeons voted to do away with their section and it was suggested that the Council consider abolishing other sections.

There has been a growing feeling among Association members for several years that our annual meetings are "over sectioned." At this year's meeting of the Section on Surgery, for example, only a bare handful of surgeons were present to hear a splendid surgical program that would have been of much value to the entire Association. Much the same experience was had by the other section groups. It is becoming more apparent each year that our Association is hardly large enough to provide a good meeting room attendance when more than one session is going on at a time. When the Association's registration is dissipated through several simultaneous meetings, all such meetings suffer.

It would hardly be fair to cite the deleterious effect of the section assemblies without recognizing their great value. No one would attempt to deny that the Section on Eye, Ear, Nose and Throat, for example, provides a valuable forum for the men who practice that specialty. The same is true of the Section on Pediatrics or any other specialty where the specialists can concentrate on highly technical material of no general interest to outside practitioners. Like all other questions, there are two sides to this one.

The Association's Committee on Postgraduate Study offered what might be a satisfactory solution of this problem in its report made to the House of Delegates at the White Sulphur Springs meeting in 1940. This committee suggested that all section and specialty meetings of the Association be held under Association sponsorship in the fall of each year. This would give each specialty a full day instead of the two and one-half hours now alloted at the annual state meeting. The report further suggested that an outstanding leader in each specialty be brought in at Association expense to head the program for each section meeting.

This report of the Postgraduate Committee was received but its recommendations were never considered by the House of Delegates. Perhaps it is time to go back a year and give proper study to this matter. Most doctors who are for abolishing the sections will readily admit the value of section assemblies if properly attended. It may be that the proper solution was offered last year and we failed to recognize it. The JOURNAL is not recommending any plan of action, but consideration of a plan already offered.

REDUCING IN WEST VIRGINIA

At press time we learned of the action of the Barbers' and Beauticians' Board in prohibiting West Virginia beauty parlors from using reducing machines and in giving treatments of any kind to reduce adipose tissue. The action was embodied in a resolution which was presented to the board by Dr. C. F. McClintic, state health commissioner, and ex-officio chairman.

Adoption of the resolution means that all beauty parlors will be instructed to remove all machines and apparatus used in attempting to reduce fat on the human body. The Board of Barbers and Beauticians condemned the operation of such mechanical devices as "fraudulent practice."

We commend the Barbers' and Beauticians' Board, and Dr. McClintic, for this aggressive action. From his record as a public official, we feel that Dr. McClintic will not waste any time in seeing that the new ruling is carried out. The danger of reducing gadgets was covered pretty well in the April 26 issue of the *Journal of the American Medical Association*. It was stated, "There is no scientific evidence whatever to indicate that adipose tissue can be made to disappear by massage or by any other means from one region of the body without its disappearing in comparable amounts from other regions."

CONVENTION TRANSACTIONS

Seventy-fourth Annual Meeting, West Virginia State Medical Association
May 12, 13, 14, 1941

Convention High Lights

Dr. R. O. Rogers, Bluefield, will head the Association next year. He takes office on January 1, 1942. His full name is Richard Ovid Rogers. He was born in Surry County, Virginia, in 1882, attended William and Mary College with Dr. Walter E. Vest of Huntington, graduated Medical College of Virginia in 1907, interned Memorial Hospital, Richmond. He is medical director of the Bluefield Sanitarium and limits his practice to internal medicine. He has a charming wife and a son and daughter, both of high school age.

Other Association officers elected at the Charleston meeting were as follows:

President, Dr. R. O. Rogers, Bluefield; first vice president, Dr. Guy H. Michael, Belington; second vice president, Dr. E. H. Starcher, Earling; treasurer, Dr. T. M. Barber, Charleston; A.M.A. delegate, Dr. Ivan Fawcett, Wheeling; A.M.A. alternate, Dr. George Evans, Clarksburg.

District Councillors—First district, Dr. J. C. Peck, Moundsville; second district, Dr. M. H. Porterfield, Martinsburg; third district, Dr. L. W. Deeds, Buckhannon; fourth district, Dr. Raymond Sloan, Huntington; fifth district, Dr. George W. Easley, Williamson; sixth district, Dr. Harold Jones, Montgomery.

The Scientific Committee to arrange next year's program consists of Dr. Andrew E. Amick, Charleston, chairman; Dr. Wade H. St. Clair, Bluefield, and Dr. R. J. Condry, Elkins.

White Sulphur Springs was selected as the site for the 1942 meeting.

Reports have been turned in on the following elections in the various sections of the scientific assembly:

Section on Surgery—Dr. Hu C. Myers, Philippi, chairman; Dr. Guy H. Michael, Belington, secretary.

Section on Internal Medicine—Dr. P. A. Tuckwiller, Charleston, chairman; Dr. Harold C. Jones, Montgomery, secretary.

Section on Pediatrics—Dr. Raymond Sloan, Huntington, chairman; Dr. Thomas G. Folsom, Huntington, secretary.

Section on Eye, Ear, Nose and Throat—Dr. John H. Trotter, Morgantown, chairman; Dr. V. Eugene Holcombe, Charleston, secretary.

Obstetrical and Gynecological Society—Dr. Carl S. Bickel, Wheeling, president; Dr. F. E. Brammer, Dehue, vice president; Dr. A. P. Hudgins, Charleston, secretary.

West Virginia Heart Association—Dr. R. M. Wylie, Huntington, president; Dr. William C. Stewart, Charleston, vice president; Dr. John P. Helmick, Fairmont, secretary.

Council Meeting

The Council of the West Virginia State Medical Association met in Room 305, Daniel Boone Hotel, Charleston, on May 11, 1941. The meeting was called to order by Dr. Frank V. Langfitt, chairman, at 8:30 o'clock. Councillors present were Drs. Langfitt, Robert K. Buford, Association president; T. M. Barber, treasurer; Raymond Sloan, Frank Holroyd, Ray M. Bobbitt, Andrew E. Amick, J. L. Wade, George W. Easley, L. W. Deeds and Cecil O. Post. Others present were: Drs. Walter E. Vest, James R. Bloss, R. J. Wilkinson, and Mr. Joe W. Savage, executive secretary.

The minutes of the previous meeting were read and approved on motion of Dr. Amick.

The report of the executive secretary was accepted on motion of Dr. Post.

On motion of Dr. Amick, the Association's fiscal year was ordered to run from January 1 to December 31, as recommended in the report of the secretary.

On motion of Dr. Amick, the report of the treasurer was accepted.

Dr. Vest reported for the Journal Publication Committee. The report was accepted with thanks and commendation on the motion of Dr. Wade, seconded by Dr. Bobbitt.

On motion of Dr. Holroyd, seconded by Dr. Sloan, honorary life membership was conferred on the following Association members:

Drs. George D. Jeffers, Parkersburg; J. M. Teter, Beaver; D. B. Jarrell, Beckley; M. C. Banks, Raleigh; A. K. Kessler, Huntington; A. R. MacKenzie, Huntington; George H. Davis, Hollidays Cove; E. S. DuPuy, Beckley.

On motion of Dr. Sloan, seconded by Dr. Bobbitt, the Council accepted the recommendation of the Publication Committee for the appointment of an Association Library Committee and requested the same to be presented by Dr. Langfitt in the House of Delegates. The recommendation called for a committee of three members, one to be appointed by the Association president, and to be chairman, one to be appointed by the Kanawha Medical Society and one by the JOURNAL Publication Committee.

On motion of Dr. Holroyd, seconded by Dr. Bobbitt, the salary of Mr. Joe W. Savage, executive secretary, was increased from $500 per month to $550 per month. It was provided that the increase was to come out of the profits of the WEST VIRGINIA MEDICAL JOURNAL.

On motion of Dr. Bobbitt, duly seconded, Mr. Savage was granted a four month leave of absence without pay to start on June 1, 1941.

On motion of Dr. Amick and variously seconded, Dr. Vest was reelected to the Publication Committee for a term of five years.

On motion of Dr. Bobbitt, the meeting adjourned at 10 o'clock p. m.

JOE W. SAVAGE,
Ex-officio Secretary.

Report of Executive Secretary

Each year the Association's activities are covered more or less completely by the various committee reports. Therefore, my report is necessarily short, dealing largely with membership, finance, and a few unclassified matters.

At the time this report was prepared (May 1, 1941) the Association had 1,307 members, which is an increase of 23 members over last year. One hundred and seventy-five new members have been admitted during the past 12 months. Approximately 25 members have been lost by death. More than 50 members are in military service. Others have moved outside the state. Our delinquent list contains the names of about 100 physicians as compared to 39 delinquents at convention time last year. However, last year's convention was two and one-half months later in the year. We feel certain that by the opening date of this year's meeting (May 12) our 1941 delinquent list will be reduced to approximately 50 members.

The total Association membership of 1,307 physicians is the largest in the history of this organization.

At the time this report was prepared, the annual audit of Association finances was just starting. It was therefore not possible to include the Auditor's Report in the handbook, or to give final figures in my own report. Indications are, however, that the Association has enjoyed a very successful year financially. It is also indicated that the JOURNAL will show an annual profit of better than $2,000 for the year. These estimates may be verified by referring to the auditor's financial statement which will be printed as a supplement to the handbook and handed to each officer and delegate at convention time.

In connection with the Association finances, I would like to recommend to the Council that our fiscal financial year be changed to end on December 31 instead of on April 30, as it does now. When our annual audit is made on May first, the bulk of the Association's income for that year is already in the treasury. Disbursements, however, still have eight months to go. This gives a somewhat false conception of the Association's liquid assets, because we have from $5,000 to $6,000 more in cash right now than we will have at the end of the year. An audit of the Association's finances on January first of each year would not only give a true picture of the Association's financial status but it would also make the figures always available for the immediately following meeting of the Council, and the year could be planned accordingly.

While on the subject of finances, it should be pointed out that the Fidelity Investment Association was placed in receivership in April of this year. The Association has carried a $6,000 annuity contract with the Fidelity Investment Association for approximately eight years. The Association has invested a total of $3,191.40 in this contract, of which the Fidelity Investment Association returned one-half of the above amount on a JOURNAL advertising exchange basis. In other words, the actual "out-of-pocket" cost of the contract to the Association was one-half of $3,191.40, or $1,595.70. We have made careful inquiry through the Association's banking connections and through the state insurance department with reference to the financial worth of the Fidelity Investment Association, and we are reliably informed that we will take little, if any, loss on this contract.

Since last year's meeting the action of the West Virginia Public Health Council in revoking the license of Dr. S. M. E. Simon of Williamson has

been upheld by the Circuit Court of Mingo County. Simon has appealed to the State Supreme Court and the case comes up there on appeal at the September term.

Once again I take this annual opportunity to express deep appreciation to the officers and members of the Association for their friendship and for their helpful attitude toward the headquarters office.

Respectfully,

JOE W. SAVAGE,
Executive Secretary.

Treasurer's Report

To the Council and House of Delegates,
West Virginia State Medical Association.

Gentlemen:

Pursuant to authority vested in me through Section 3, Chapter VI of the By-Laws, I employed the firm of Norman S. Fitzhugh, certified public accountants, Charleston, to audit the books and records of the executive secretary for the fiscal year ending April 30, 1941. I submit herewith the auditor's report.

T. MAXFIELD BARBER, *Treasurer.*

Dr. T. M. Barber, Treasurer,
West Virginia State Medical Association,
Charleston, West Virginia.

I have audited the receipts and disbursements of the West Virginia State Medical Association for the fiscal year ended April 30, 1941, and am attaching hereto statements covering the various funds for the period under review.

All receipts of record and all disbursements were verified and the cash balances were reconciled with statements of the depository banks. Sufficient tests were made to satisfy me that all receipts had been recorded and paid checks were examined covering all disbursements. The life insurance policy on the life of Dr. Hugh G. Nicholson, Postal Savings Bonds, and the Annuity Contract with Fidelity Investment Association were verified by inspection.

I therefore certify that, in my opinion, all receipts in the period under review have been properly accounted for and are correctly stated in the books and in the statements attached hereto. I further certify that the balances in banks at the close of business April 30, 1941, to the credit of your association aggregated $10,361.87.

A summary statement of cash follows:

Balance May 1, 1940	$11,821.31
Receipts for the fiscal year	21,902.20
	$33,723.51
Disbursements for the fiscal year	$23,361.64
Balance April 30, 1941	$10,361.87

The cash balance shown above is attributable to the various fund accounts as follows:

General Fund	$ 5,295.83
Medical Journal Fund	10,364.03
Indigent Fund	46.87
Medical Defense Fund	115.92
Convention Fund	592.47
	$16,415.12
Nicholson Property Rent Account—Deficit	6,053.25
Total All Funds—Net	$10,361.87

Postal Savings Bonds costing $1,987.50 and having a maturity value of $2,650.00 had an actual cash surrender value of $2,014.00 on April 30, 1941.

A payment of $352.80 on the Fidelity Investment Association Annuity Contract in May, 1940, increased the cost of this contract to $3,544.20. The actual value of this contract cannot be determined at the present time as the company is now in the hands of receivers.

The life insurance policy on the life of Dr. Nicholson increased in cash surrender value in the amount of $675.00. A premium of $1,261.75 on this policy was included in cash disbursements.

A comparative statement of assets at the end of the last two fiscal years is as follows:

	April 30, 1940	April 30, 1941	Increase *Decrease*
Cash in Banks	$11,821.31	$10,361.87	*$1,459.44*
South Ruffner Park Property	8,442.57	8,442.57	—
U. S. Postal Savings Bonds — Cash Value	1,987.50	2,014.00	26.50
Cash Surrender Value Life Ins.	9,325.00	10,000.00	675.00
Annuity Contract—Cost	3,191.40	3,544.20	352.80
	$34,767.78	$34,362.64	$ *405.14*

Respectfully submitted.

NORMAN S. FITZHUGH,
Certified Public Accountant.

Charleston, W. Va.,
May 6, 1941.

COMBINED STATEMENT OF RECEIPTS AND DISBURSEMENTS

Balance May 1, 1940		$11,821.31
RECEIPTS		
Dues (Net)	$11,188.33	
Advertising (Net)	6,930.36	
Emblems Sold	187.70	
Commercial Exhibits	2,740.00	
Rent—Nicholson Property	780.00	
Interest on Savings Accounts	18.21	
Miscellaneous	57.60	
Total Receipts		$21,902.20
		$33,723.51

DISBURSEMENTS

General Fund (Eliminating Transfers)	$12,962.88	
Medical Journal Fund	5,344.79	
Indigent Fund	1,561.75	
Medical Defense Fund	160.00	
Convention Fund	3,004.03	
Nicholson Property Rent Account	328.19	
Total Disbursements		$23,361.64
Balance April 30, 1941		$10,361.87

Charleston National Bank — Checking Account	$ 9,132.59
Charleston National Bank—Savings Account	121.48
National Bank of Commerce—Savings Account	1,107.80
Total (As per Balance Above)	$10,361.87

General Fund

Balance May 1, 1940			$ 7,367.17
RECEIPTS			
Dues	$11,221.83		
Less: Refunds	33.50	$11,188.33	
Interest on Savings Accounts		18.21	
Sale of File Case		10.00	
Sale of Supplies		25.00	$11,241.54
			$18,608.71
DISBURSEMENTS			
Salary—Executive Secretary		$ 5,970.00	
Office Salaries		1,525.70	
Office Supplies and Expense		994.52	
Office Rent		590.00	
Library Expense		131.94	
Telephone and Telegraph		223.66	
Postage		488.08	
Traveling Expense		819.92	
Convention Expense		612.56	
Social Security Tax		87.60	
Audit and Legal Expense		716.00	
Legislation Expense	$ 478.68		
Less: Refund	64.40	414.28	
Miscellaneous		388.62	
Transfer to Indigent Fund		175.00	
Transfer to Medical Defense Fund		175.00	$13,312.88
Balance April 30, 1941			$ 5,295.83

Medical Journal Fund

Balance May 1, 1940			$ 8,573.26
RECEIPTS			
Advertising	$ 8,038.35		
Less: Discounts	1,107.99	$ 6,930.36	
Emblems Sold		187.70	
Miscellaneous		17.50	$ 7,135.56
			$15,708.82
DISBURSEMENTS			
Printing		$ 4,576.03	
Engraving	$442.78		
Less: Refund of Journal Cuts	19.84	422.94	
		$ 4,998.97	
Less: Discounts		173.48	$ 4,825.49
Postage			126.00
Annuity Contract — Fidelity Investment Association			352.80
Miscellaneous			40.50 $ 5,344.79
Balance April 30, 1941			$10,364.03

Indigent Fund

Balance May 1, 1940		$ 1,433.62
RECEIPTS		
Transfer from General Fund		175.00
		$ 1,608.62
DISBURSEMENTS		
Premiums on Life Insurance—Dr. Nicholson	$ 1,261.75	
Benefits Paid to Mrs. S. A. Daniel	300.00	$ 1,561.75
Balance April 30, 1941		$ 46.87

Medical Defense Fund

Balance May 1, 1940		$ 100.92
RECEIPTS		
Transfer from General Fund		175.00
		$ 275.92
DISBURSEMENTS		
Attorney Fees		$ 160.00
Balance April 30, 1941		$ 115.92

Convention Fund

Balance May 1, 1940		$ 851.40
RECEIPTS		
Commercial Exhibits	$ 2,740.00	
Refund on Convention Supplies	5.10	$ 2,745.10
		$ 3,596.50
DISBURSEMENTS		
Supplies and Labor	$ 1,163.34	
Entertainment	1,067.25	
Traveling Expense	437.40	
Reporting	120.00	
Miscellaneous	216.04	$ 3,004.03
Balance April 30, 1941		$ 592.47

Nicholson Property Account

Balance May 1, 1940		$ 6,505.06
RECEIPTS		
Rents		780.00
		$ 5,725.06
DISBURSEMENTS		
Repairs	$ 202.61	
Taxes	90.58	
Insurance	35.00	$ 328.19
Balance April 30, 1941		$ 6,053.25

Report of Publication Committee

To the Council of the West Virginia State Medical Association:

Gentlemen:

Your Publication Committee has striven to make the JOURNAL during the past year the best it has ever been. During this period we have published 89 scientific manuscripts, 56 of which were presented by the members of our own Association and 33 by nationally prominent physicians and surgeons residing in other states. In addition we have published several manuscripts by members of professions allied to medicine, especially dentistry and pharmacy. There have been no material changes in the format as that now in use has been well received by the profession.

While the annual audit is not complete, the preliminary financial statement shows a net profit of $1,790.77. To this should be added the increased value of our equity in our Fidelity Investment bond amounting to $360.00, bringing the total net profit for the past year to $2,150.77. The total value of the JOURNAL account now on our books is $10,361.87.

We have used more illustrations during the past year than during any other like period in the JOURNAL's history. Also the engraving cost amounting to $475.00 has exceeded by about $35.00 the amount so expended in any previous year. We believe, however, that the increased expenditure has been justified.

During the coming year we hope not only to maintain the present high standard, but in fact to make the JOURNAL better than it has ever been before.

We cannot close this report without acknowledging our great indebtedness to our business manager, Mr. Joe W. Savage. It is to his untiring efforts that the success of the JOURNAL is largely due, especially the financial success. We are accordingly recommending to the Council that Mr. Savage's salary be increased $50.00 per month payable out of the JOURNAL fund. We feel that our net profit, which is so largely due to the work of Mr. Savage, justifies the recommendation.

Respectfully submitted,

WALTER E. VEST, *Chairman*,
J. C. HUTCHINSON,
G. G. IRWIN,
W. M. SHEPPE,
EDWARD J. VAN LIERE,

Legislative Committee

The 1941 session of the West Virginia legislature adjourned sine die on March 8, 1941. Fewer bills were enacted than at any session for the past thirty or forty years. Both the administration's Labor Relations Act and Wage and Hour Act, in which the hospitals of the state displayed a great interest, went down to defeat in the final days of the session.

The West Virginia State Medical Association was chiefly interested in three bills. It sponsored the first, endorsed the second, and opposed the third.

Senate Bill 100, introduced by your chairman, was the only Association-sponsored bill. Its purpose was to completely divorce workmen's compensation cases from hospital list practice. The first accomplishment along this line was in 1935 when the Association fought through a bill with the same objective but without any penalty clause attached. The 1935 bill was made rather ambiguous in its journey through the legislature. As a result, in recent years many hospital owners and employers of labor entered into contracts whereby hospitals would agree that for a fixed sum per month per man, paid by the employer, the hospital would not send bills to the compensation fund. In some cases this monthly stipend per man was as low as ten cents. The inevitable result of this system would be marked deterioration of medical and hospital service. Senate Bill 100 not only clarifies the language but also provides that "any employer or hospital violating the provisions of this section shall be guilty of a misdemeanor and upon conviction thereof shall be sentenced to pay a fine not exceeding $1,000 or to undergo imprisonment not exceeding one year, or both." This bill becomes effective June 3, 1941. We believe this bill will cure one of the Association's most troublesome problems.

House Bill 246, the proposed Hospital Licensing Bill, was introduced by Dr. G. P. Evans and was reported out favorably by the House Committee on Medicine and Sanitation, but got behind a mass of general legislative proposals in the final days of the session and never reached a final vote. This bill, sponsored by the Hospital Association of West Virginia, would have created a hospital licensing committee consisting of four members and the state health commissioner. The hospital committee was empowered to appoint an inspector to inspect every hospital in the state at least once a year. The com-

mittee was also empowered to set up rules and regulations for hospitals in various communities to meet. The bill not only had our support but also the support of the Public Health Council of West Virginia and the State D.P.A. Many of the controversial portions of the bill were ironed out in the committee hearings during the recent session, and early opposition to the bill by various factions was smoothed out and withdrawn. The bill made many friends and had strong support. With proper management and good luck, it should be enacted into law, if presented again in 1943.

Senate Bill 108 was the biennial "faith healing" bill sponsored by the Christian Science church. This bill has now been put through in 44 states. Its purpose is to exempt faith healers and spiritual healers from the provisions of the Medical Practice Act, so that these people can open up offices in downtown business sections and advertise and collect fees for their services. The bill was introduced by Senator Earl H. Smith of Marion county. It met with the usual vigorous opposition of the Association, combined with some excellent work against the bill by the Woman's Auxiliary. Senate Bill 108 never got out of committee.

Splendid support was given our legislative committee by a number of individual doctors throughout the state. This support resulted partly from legislative bulletins and partly from editorials in the WEST VIRGINIA MEDICAL JOURNAL. Copies of many of the letters written by physicians to their legislators and senators were sent to the executive secretary and we were able to do some excellent follow-up work in this regard. For this fine voluntary help, your committee desires to express its great appreciation.

Respectfully submitted,

WARD WYLIE, *Chairman*,
GEORGE P. EVANS,
FRANK V. LANGFITT,
R. H. DUNN,
RUSSEL KESSEL,
C. E. WATKINS,
W. W. POINT.

Public Assistance Advisory Committee

Since the Medical Advisory Committee of your Association to the State Department of Public Assistance last reported in July, 1940, at the White Sulphur Springs meeting, circumstances have been such as to have resulted in unusual committee personnel turnover. The loss, through death, of the late Doctor John W. Moore in August, 1940, and the loss (by resignation) of Doctor Moore's successor, Doctor Grover C. Robertson, were followed by the loss of the committee's veteran chairman, Doctor B. H. Swint, who found it necessary to resign some six weeks ago. As a consequence, the committee's present chairman is the only remaining member of the group which served during the preceding year.

The turnover of committee personnel was a natural deterrant to committee activities and resulted in fewer meetings than might have been indicated. However, with four years of experience as a guide to policy and operation of the public medical care plan behind it, the committee found its services less in demand during the past year. Basic policies, for the most part, had been formulated. Consequently, the Medical Advisory Committee's functions have been primarily those of advising the lay personnel of the Bureau of Medical Services of the State Department of Public Assistance as to the professional implications of the individual, day-by-day problems which arose.

As the members of the Association must be aware, the purpose of the Association's Medical Advisory Committee to the State Department of Public Assistance is to act as liaison representatives of the organized medical profession and the DPA in matters relating to the program of medical care for the general relief and classified assistance population and the program of adult physical rehabilitation. Its chief duties are to act in advisory capacity to the State Department of Public Assistance in adoption of policies affecting the physicians and surgeons in the State of West Virginia. The committee acts as an appeal body for the county medical advisory committees, when questions arise which involve policies. The committee also has the responsibility of approving or disapproving all hospitals for emergency relief and rehabilitation hospitalization. This is done only after a careful investigation and report on the hospital is made to the committee. The approval of surgeons for general relief and rehabilitation surgery is done after a complete investigation of the surgeon's experience, number of operations per year, etc., are taken into consideration.

During the first three quarters of the fiscal year covered by this report (July 1, 1940 to April 1, 1941) the committee has assisted in matters of

policy and case interpretation involving payments of $395,396.20 for hospitalization, sanitarium care, surgery and medical care of the general relief population, some $45,000 of increased public assistance grants (old age assistance, aid to the blind, and aid to dependent children) for emergency hospitalization, surgery and medical care, and some $78,304.37 of expenditures for hospitalization and surgery under the adult physical rehabilitation program.

Predicated upon the above-stipulated expenditures during the first three quarters of the fiscal year, and if last quarter expenditures hold to the quarterly average, the 1940-1941 fiscal year will mark expenditures substantially in excess of those for the 1939-1940 period.

Of the $687,000 estimated as the public medical care cost for this fiscal year, it is estimated that $280,000 will be paid to the medical profession for surgery and medical care in the homes and in hospitals, while the balance of approximately $407,000 will be paid to institutions for sanitarium care and hospitalization, according to officials of the DPA Bureau of Medical Services.

During the past year our committee, through the Association headquarters office, has received and filed the records of operations contributed by West Virginia surgeons about one year ago under what is generally known as surgical service contributions. Since last July first, a total of $10,044.25 in service has been given under this plan. We feel that a great deal more work is done that is not reported.

Only 19 of the 55 counties of the state have taken advantage of the plan, which was designed to bring about a more equitable distribution between surgery and general practice. Harrison county was more alert than any of the other county departments in utilizing its gratuitous surgical talent with better than $4,000 in contributed surgical service. Other counties that participated rather freely in the program were Kanawha, Monongalia, Wood, Mercer and Cabell.

The following breakdown of surgical services under the program is presented:

General surgery	$ 3,900.00
Eye, ear, nose and throat	3,045.25
Orthopedic surgery	1,314.00
Gynecology	615.00
Unclassified	1,170.00
Total	$10,044.25

The surgical service contribution plan was worked out on a voluntary basis by more than 100 surgeons and specialists and was independent of the Association. The plan winds up on June 30, 1941. Unless instructed to do so, your committee will take no action in promoting continuance of the plan but we will be glad to cooperate with the contributing surgeons if they themselves desire to continue. We believe their service contributions have materially helped the DPA medical program and also promoted better relationship between the medical profession, the Department of Public Assistance and the public.

After half of this fiscal year had expired and it then appeared that the costs of the medical care program of the DPA were exceeding those of the 1939-1940 fiscal period, the Medical Advisory Committee requested the DPA Bureau of Medical Services to make an analysis of the situation and seek to determine the causes of the increased costs. The following are excerpts from the bureau's memorandum on the subject:

"In the first place, the totals of expenditures for hospitalization include the costs which county departments of public assistance have assumed for the care of tuberculosis patients. This one item alone has increased sharply each month, due * * * primarily to the fact that substantial increases in sanitarium beds have been effected. In prior years the number of tuberculosis patients for whom county departments were responsible was circumscribed by the limited number of sanitarium beds available, with the result in practically every county there was a large waiting list of patients who needed sanitarium care, but for whom beds were not available. However, as more beds became available the waiting lists were reduced and more county department-sponsored patients were admitted to the sanitoria. Naturally, the result has been a steadily mounting expenditure of relief funds for sanitarium care.

"Then, too, we are all aware, of course, that southern West Virginia experienced a devastating poliomyelitis epidemic just as the current fiscal year was beginning. In the early stages of the epidemic (before the Crippled Childrens' Division could get properly organized to make its contribution to the program of care for the victims of the 'polio' epidemic) heavy burdens were placed upon the county departments in expenditures for numerous home calls by physicians, requirements of isolation nursing service, and some acute isolation institutional care.

But perhaps even more expensive than the care provided actual victims of the poliomyelitis epidemic by the counties was the additional expense resulting from emergency calls requested, and sometimes demanded, by terrorized parents who feared that their childrens' sore throats, colds, nausea, headaches, et cetera, were 'sure' symptoms of infantile paralysis. In other words, physicians' home calls were made in many cases when, under normal conditions, no such service would have been requested. Then, too, almost coincident with the infantile paralysis epidemic, there was a semi-epidemic of * * * 'summer flu' or 'summer cold' * * * which was followed in mid-winter by a serious epidemic of influenza and, later, by an epidemic of measles. Add to these unusual conditions the normal day-to-day medical relief problems, and then add further expansion of the medical relief agenda to include new phases which had not been contemplated in the beginning, and it is understandable that expenditures for public medical care are again on the increase.

"* * * Speaking of expansion of medical relief services, reference is made (1) to the fact that during the past fiscal year the full weight of the cancer program, formulated in mid-1939, was just being felt. Hundreds of dollars of expenditures for deep x-ray therapy and radium therapy were made in the treatment of malignant conditions which, during the early stages of the medical relief program, would have been considered chronic conditions not included in the active treatment sphere of the program. Furthermore, (2) increased data on the benefits of surgery in the treatment of pulmonary conditions have tended to bring about expenditures of greater sums from DPA budgets for such purposes—a policy which involves large initial costs, but which statistics prove to be worthy when the long-range treatment program of the patient is considered. During this fiscal year still another new phase of the medical relief program has been developed. This reference is (3) to the neurosyphilis plan involving malarial treatment * * *."

In the past, patients at the two state tuberculosis sanitoriums have had difficulty in getting chest surgery performed. Some of them have been sent to Richmond, Virginia, or to Washington, D. C., for this surgery and it is the desire of this committee and the State Department of Public Assistance that some plan be worked out whereby the chest surgery can be done by surgeons in this state; also, that the surgeons be qualified to do the other chest surgery as they might be required at the two state institutions. In this consideration we believe it wise that a committee be appointed to investigate this condition according to the recommendation made.

No little time is spent by this committee in reviewing and approving or disapproving the treatment of cancer cases. Physicians throughout the state who have been treating cancer cases for the Department of Public Assistance must realize that the funds for such treatment are very inadequate and that these funds must be spent where the greatest amount of good can be done per dollar expended, and that it is impossible to give cancer cases the amount of treatment that each of us realize should and would be given in private practice. Due to the time required for reviewing these cases, a recommendation is herein made for the appointment of a cancer committee.

The Bureau of Medical Service memorandum to the committee added, however, that it noted "another tendency, particularly in the urban centers", namely, "the tendency of some members of the medical profession to refuse to make calls in the homes of indigent persons", adding that "this arises principally from the practice of urban doctors who confine their services mostly to their offices, to clinics, or to the hospitals." The consequence of this the bureau finds, "is that more patients are reaching the hospitals as emergency cases under the 48-hour provision of Section 13, Article VI of the Public Welfare Law." To offset this tendency, the bureau reported, "some counties have recognized this condition and have moved to correct it by employing one or more physicians on part-time service to make calls in the homes of indigent persons", which, the committee feels, is a dangerous but expected consequence, and one that county medical societies should watch and guard against in the interest of thwarting further steps toward even more close approaches to socialization of medical practice.

Following the above observations as to reasons for the increase in costs of the medical care programs this year, as compared with those of the previous year, the DPA of Medical Services reported that "for the most part, the conditions cited thus far as factors which have influenced, or are influencing the cost problem of the medical relief program are more or less incidents to the growth of such a program and, perhaps, it is not unusual that still another troublesome appendage has been progressing in its seriousness with each year of the life

of the medical relief plan." It then referred to "the chief complaint of county departments of public assistance, namely, that too many of the doctors and hospitals have assumed that the medical relief program is intended to be a guarantee against definitely bad and questionable accounts, and that it is intended to provide reimbursement for services performed for all indigent persons, irrespective of the type of disability which indicates medical care or institutionalization. Demands on the part of doctors and hospitals for advance authorization of services, without regard for the statutory requirement that investigation of eligibility must be made before public funds can be obligated, are said by county departments to make for their most vexing problem in connection with administration of the medical relief program."

Some few physicians who have been doing medical relief work, have lost sight of the original purpose for which this service was organized and for which the medical relief fees were allowed. We are well aware of the fact that all fees allowed for medical relief are far below the average, but the physicians are receiving these fees at the present time where formerly they received none at all. We have had an unending task in trying to prevent a few physicians in the state from charging excessive fees and doing unnecessary surgery, which has the earmarks of the services being performed for the fee and not for the benefit of mankind. We are very happy though that there are only a very few physicians in the state who do this and we realize that the rank and file of the medical profession and the members of the West Virginia Medical Association do abhor such practice.

The medical service bureau's memorandum observed that "several factors probably contribute to the prevalence of this all-too-common disruption of the relationships between county departments of public assistance and the medical profession and hospitals, but every doctor and every hospital administrator * * * must realize that the Public Welfare Law clearly defines the duties of county directors and county councils of public assistance on the subject of authorizing grants of relief, irrespective of the forms in which such grants are made. They must realize, too, that public funds available for relief and public assistance are circumscribed by budgetary limitations which will not permit acceptance of cases other than those definitely known to be acute emergencies. Of course, from a humanitarian standpoint, it is most unfortunate that so little public support can be accorded the relief client or medically indigent person who suffers a chronic incurable disease, but unless and until budgets for the medical relief phases of the state's public welfare plan are vastly increased no other policy than that of confining authorizations for relief-financed services to acute emergencies will be possible. This factor was taken into account when the medical relief plan was first established about four years ago, and circumstances in the interim period have not permitted an alteration thereof."

Although the statute remains broad in its implications of eligibility for medical services at public expense, the DPA Bureau of Medical Services stated to the committees that "notwithstanding statutory authority, experience has taught that budgets heretofore and currently available have been and are inadequate to provide chronic care, or care for many of the borderline cases, such as persons or family groups supported by WPA income or similar wages."

From the information available to the Medical Advisory Committee it does not seem reasonable to expect that budgets available to the state and county departments of public assistance during the forthcoming fiscal year (July 1, 1941 to July 1, 1942) and during the year to follow, will permit the medical relief program to be administrated on any more liberal lines than those which have obtained during the current year, and the committee realizes full well that the task of helping the DPA coordinate its medical care program and keep it within the bounds circumscribed by available budgets will be no more easy in the future than it has been during the current and past years. The committee does, therefore, request the sympathetic cooperation of every member of the organized medical profession during the difficult days which lie ahead.

The experience of this committee in dealing with the various county departments of public assistance has been that in the counties where they have an active county medical advisory committee there is far less contention and the program works much smoother than in counties without a medical advisory committee. For this reason, we urge the physicians and county medical societies to be more active in the capacity of cooperation and advising the county departments of public assistance.

In consideration of the aforestated conditions, the following recommendations are made:

First. That all physicians cooperate with the program of medical relief, realizing that this service

to mankind should be performed, and that the fees paid by the Department of Public Assistance are more of a token of appreciation for charity work than actual remuneration. Also, when referring cases to surgeons that the physicians refer them to men who do their work conscientiously and not for the insignificant fee paid.

Second. A cancer committee be appointed by the president of the Association for the purpose of acting in an advisory capacity to the State Department of Public Assistance, as to policies, treatment, etc., concerning cancer cases, under the supervision of that department, and that committee act as a subcommittee to this one.

Third. The president of the Association appoint a three man committee to cooperate with the State Department of Public Assistance and the State Board of Control in making the necessary arrangements to take care of chest surgery for the tuberculosis patients in the two state sanitoriums, without having to send the patients out of the state for the same.

Fourth. Each county department of public assistance have an active Medical Advisory Committee.

THOMAS H. BLAKE, *Chairman*,
HUGH A. BAILEY,
PAUL H. REVERCOMB.

Report of Committee on Maternal Welfare

Your committee submits the following report of maternal welfare activity for the year 1940:

The chairman of your committee has had the privilege of representing the obstetricians on the Advisory Committee of the Division of Maternal and Child Health of the State Health Department.

As in previous years the state was divided into a northern and southern circuit, for the refresher courses. The program was changed in that only one lecture was given in obstetrics. In previous courses there had been three with two others devoted to pediatrics. In the program for 1940 three periods were devoted to the latter subject and one to syphilology.

In the northern circuit lectures were delivered at Weirton, Moundsville, Hopemont, Weston and Keyser. The attendance of physicians at the obstetric lectures was Weirton, 16; Moundsville, 9; Hopemont, 15; Weston, 16; Keyser, 9. An average of 15.

In the southern circuit the courses were held in Montgomery, Beckley, Logan, Welch and Lewisburg. The attendance of physicians registered was Montgomery, 23; Beckley, 39; Logan, 28; Welch, 15; Lewisburg, 17. An average of 24.4.

Your committee is pleased to report that there has been a steady decline in the maternal mortality rate from 53 per 1,000 in 1936 (5.3 per cent) to 36 per 1,000 in 1939 (3.6 per cent). Completed statistics for 1940 are not as yet available. This is a reduction of 17 per 1,000 or 1.7 per cent in a period of the four years 1936-1939.

During the year 1939-1940—351 maternal health conferences were held throughout the state with a total attendance of 2,688 prospective mothers. An average of 7.6.

The committee feels that this continued improvement in the maternal mortality in West Virginia is very largely due to these refresher lectures and the maternal health conferences.

The committee also wishes to commend the efforts of the West Virginia Obstetrical and Gynecological Society toward stimulating interest in improved maternal welfare activities.

It is the earnest wish of your committee that the members of the profession continue to strive for the attainment of the irreducible minimum of maternal mortality.

Respectfully submitted,

JAMES R. BLOSS, *Chairman*,
M. B. WILLIAMS,
E. F. HEISKELL,
J. F. WILLIAMS,
E. J. HUMPHREY,
H. G. STEELE,
W. E. HOFFMAN.

Child Welfare Committee

Your Committee on Child Welfare presents the following report for the year 1940:

Postgraduate conferences in pediatric subjects constituted the major project of the committee. The subject matter consisted of five lectures each on "Endocrine Problems of Childhood", "Respiratory Tract Infections", and "Chemotherapy in Diseases of Childhood." The state was divided into a northern and southern section, making a total of thirty lectures for the entire state.

Dr. Jay M. Arena, Professor of Pediatrics at Duke University, presented the program in the northern section. Lecture points were Weirton, Weston, Keyser, Hopemont, and Moundsville. The total attendance was 234 doctors and visitors.

Dr. Robert A. Lyon, Pediatric Department of the University of Cincinnati, presented the program in the southern section. Lecture points were Montgomery, Beckley, Logan, Welch, and Lewisburg. The total attendance was 342 doctors and visitors.

The program for postgraduate clinical conferences for physicians in West Virginia was instituted in the year 1936.

The chairman of your committee has steadfastly pleaded that we have been more interested in the "idea" of these conferences than in the scientific benefits resulting to the physicians. This question is injected because in following this program year after year, your chairman is convinced that the physicians for whom the project was devised do not attend the lectures.

Last year the Division of Maternal and Child Hygiene of the State Health Department made possible the attendance of ten physicians (general practitioners) at the Southern Pediatric Seminar, held in Saluda, North Carolina. In addition to pediatric subjects there were included lectures in obstetrics and childhood dental problems.

For the year 1941 it is hoped to extend the number of attending physicians to as many as twenty. Physicians in the rural areas will be selected for this course, particularly those who have taken an interest in the child health conferences.

If we are to avoid periodic relicensure why not a seminar in West Virginia? Why not a seminar at one or two of the good medical schools close to us? Medical schools are interested in turning out good graduates so why should not this interest be extended to the community where their graduates locate; to the end that we are called back at specified intervals for postgraduate work?

Infant health conferences, under the supervision of the State Health Department in the year 1936, numbered 228 with an attendance of 4,552 infants. Such conferences totaled 702 with attendance of 10,617 in the year 1940. Immunizations by the State Health Department for the five year period 1935-1939 were as follows:

Year	Typhoid	Smallpox	Diphtheria
1935	28,031	11,828	20,898
1936	37,819	16,019	18,998
1937*	41,893	72,584	44,053
1938	38,838	48,270	39,188
1939	45,991	36,707	31,324

*Immunization law became effective September 1, 1937.

The above figures must impress us with what happens when we fail in our responsibility. Does this not constitute the background for governmental medicine?

Upon what is done to insure physical and mental health during maternity, infancy, childhood, and youth, depends the vigor and health of the adult population. This calls for preventive and curative services. Your committee feels that our State Health Department should be requested to make a revision of the communicable disease control regulations and that copies of such revised regulations be distributed to the schools and the physicians of the state. Your committee feels that our State Health Department should supervise a survey of the health conditions in childrens' camps.

The chairman of your committee has had the privilege of serving as the pediatric member on the Advisory Committee of the Division of Maternal and Child Hygiene of the State Health Department. In such capacity your chairman recommended that the program for preschool roundups as now conducted, be supplanted with a better plan. He further recommended that the House of Delegates be asked to approve the setting up of a West Virginia White House Follow-up Conference, sponsored jointly by the Maternal Health and Child Health Committees of our State Association.

The committee would be remiss were it to fail to express to Doctor Arthur E. McClue, former state health commissioner, and Doctor Thomas W. Nale, director, Division of Maternal and Child Hygiene, its appreciation of their sincere desire to cooperate with the physicians in the program for furthering the child health program.

Respectfully submitted,

ANDREW E. AMICK, *Chairman*,
RAYMOND SLOAN,
CARL JOHNSON,
RUSSELL BOND,
HARLOW CONNELL,
ARTHUR A. SHAWKEY,
THERESA SNAITH.

Report of Syphilis Committee

To the president and members of the West Virginia Medical Society: The following report is respectfully submitted for your consideration:

BUREAU PERSONNEL

There have been numerous changes in bureau personnel. Dr. J. B. Hozier, former director of

the bureau, was transferred to the United States Public Health Service, Venereal Disease Medical Center in Hot Springs, Arkansas, in June. Dr. L. S. Saler, past assistant surgeon, United States Public Health Service, was assigned to the bureau for active duty in May. He is now serving as clinical consultant in venereal diseases. Dr. E. V. Jones, former director of the Logan County Syphilis Study Project, returned to the central office in September after having spent one year at Johns Hopkins Medical School doing postgraduate work in the venereal diseases. Dr. Jones will also serve as clinical consultant. The consultants will visit the clinics at fairly regular intervals and will act in an advisory capacity in matters pertaining to patient management, and clinic operation. Each will attempt to cover one-half of the state.

CLINICS

The number of clinics in operation in the state remains at sixty. Two small clinics have been discontinued and two new ones organized.

The Logan County Syphilis Demonstration Project is continuing along the lines originally planned for it. Since July, 1940, funds necessary for the operation of this project have been derived from state sources. The central tabulating unit system has been in use in this clinic for the past year. Dr. Hon of the United States Public Health Service, promises some interesting figures in the near future, derived from a study of central tabulating unit reports.

It is recommended that in view of the general interest in the Logan project that it would be advisable to publish a resumé of the findings and results to date either as a bulletin from the State Health Department or as a feature article in the WEST VIRGINIA MEDICAL JOURNAL.

NEUROSYPHILIS CONTROL

On November 5, 1940, Dr. Dickerson reported to the Syphilis Committee that a few beds had been set aside at the Welch Emergency Hospital for the administration of malaria to certain selected indigent cases of neurosyphilis. Dr. Kroll of the Welch Hospital staff received some special instruction in the management of these cases at Huntington. An agreement was reached with the Department of Public Assistance to finance this program.

On March 19, 1941, the administration of malaria to indigent patients in the state was terminated. This inability to carry on such an important phase of the program was due to two factors—failure of the Department of Public Assistance to certify the funds required and secondly, increased demands on the personnel of the Welch Hospital due to the Selective Service Act, and the departure of Dr. Kroll to enter the United States Navy.

In spite of the efforts of the Bureau of Venereal Disease and the Syphilis Committee, only 12 patients have received the benefit of malaria therapy during the last three years. It was recommended that the Bureau of Venereal Disease and the West Virginia Department of Health endeavor to secure certain funds from federal and other sources to provide for the hospitalization and treatment of at least fifty indigent paretics per year.

REPORTING

The relative ease with which figures can be compiled from reports such as those used in the Logan county project suggests the possibility that such a system of reporting and tabulating might be applicable to other areas in the state. The comparative lack of what could reasonably be considered accurate data as to the syphilis problem in West Virginia would certainly indicate a need for some new and more workable system of reporting and tabulating. It, of course, goes without saying that in order to work intelligently toward the solution of a problem, the problem must be known.

The Syphilis Committee has recommended that the report book used by the State of Virginia for reporting syphilis and gonorrhea be adopted in this state. The advantages of this booklet are as follows:

(1) Avoids duplication of reports, thereby rendering a more true picture of the venereal disease problem.

(2) Provides a treatment record for the physician.

(3) Simplifies the reporting of delinquent patients when the physician desires follow-up service.

The committee has previously recommended that no patient should be admitted to a free treatment center unless specially referred by his physician. A form has been drawn up to be used throughout the state for the purpose of physician-to-clinic referral. This form was drawn up by Dr. Dickerson before his departure. The committee recommends that it be placed in use at the earliest date possible.

LITERATURE

In compliance with the committee's request, the booklet "The Management of Syphilis in General Practice" has been distributed to members of the West Virginia Medical Association. There are two

other pamphlets available for distribution to physicians "Syphilis in Mother and Child" and "The Diagnosis of Syphilis by the General Practitioner", both prepared by the Cooperative Clinical Group and released through the United States Public Health Service.

The distribution of the booklet "The Management of Syphilis in General Practice", was extremely well received and we believe appreciated by the members of the society. We recommend that the two other booklets now available "Syphilis in Mother and Child" and "The Diagnosis of Syphilis by the General Practitioner" also be sent to the members of the society with the endorsing label of the Syphilis Committee on the front cover.

SEROLOGIC TESTS FOR SELECTIVE SERVICE BOARDS

Selective service regulations require all registrants examined to have a serologic test as a part of their examination. The blood specimens are taken by the selective service board physicians. Containers and laboratory report forms are supplied by the State Health Department. The tests are performed by the State Hygienic Laboratory. Regulations require the registrant with a positive test to have a second test before induction.

Local health units are requested to cooperate in every way possible in carrying out this program.

The activities of the committee have been somewhat reduced during the past year. This is partly due to the shifting personnel of the Bureau of Venereal Disease, partly to the demands made by the armed services on civilian doctors and also to the completion of certain parts of the venereal disease program. Nevertheless, this committee will continue to promote new advances in syphilis control in West Virginia and will endeavor to cooperate at all times with the Bureau of Venereal Disease of the State Health Department.

W. M. SHEPPE, *Chairman*,
G. R. MAXWELL,
JAMES WADE,
GEORGE EVANS,
BOYD BROWN.

Committee on Industrial Health

The West Virginia State Medical Society Committee on Industrial Health was appointed on January 18, 1941, by President Robert King Buford. Under the chairmanship of Dr. J. J. Brandabur the committee was organized and a tentative program outlined. Relationship between the State Committee and the West Virginia Association of Industrial Physicians and Surgeons was immediately established and the full support and cooperation of this association was assured. Plans for a jointly conducted program during the State Medical Society Convention were completed by the Committee on Industrial Health and the president of the West Virginia Association of Industrial Physicians and Surgeons.

During completion of the above plans the local medical societies of West Virginia were requested to appoint local committees on industrial health and were notified that the State Committee was prepared to send a representative for conference with the local committee and to address the society membership in order to stimulate interest in industrial health. To date, i.e., April 15, 1941, five local societies have availed themselves of this service. Although the contacts of the State Committee with the local societies have not been numerous it is apparent that there is a genuine interest in industrial medicine and that the general practitioner realizes his important rôle which is made still more important during this period of national defense. The committee is of the opinion that leadership and cooperation are essential in the field of industrial health and that these can be afforded best by the state society.

The committee also examined the problem of industrial health in West Virginia in relation to the industrial worker and the general health level of the state. Authoritative data were made available to the committee which revealed that there are approximately 600,000 gainfully employed workers in West Virginia, of whom 265,000 or 44.0 per cent are engaged in the manufacturing, mechanical and mineral industries. Of this number 156,000 or 59.0 per cent are engaged in occupations which may cause or which have been known to cause occupational disease if the associated hazards are not properly controlled. Nearly 10.0 per cent of the total population of West Virginia, therefore, is exposed to potential health hazards in industry. Only eight other states in the United States have a larger number of workers engaged in the so-called hazardous occupations.

The following list reveals the number of West Virginia workers exposed to various industrial hazards:

NUMBER OF WEST VIRGINIA WORKERS EXPOSED TO VARIOUS INDUSTRIAL HAZARDS[1]

1.	Silicate dust	115,631
2.	Coal dust	109,498
3.	Silica dust	36,413
4.	Carbon monoxide	21,971
5.	Organic dust	20,541
6.	Petroleum products	18,207
7.	Metals N. O. C.*	15,022
8.	Gases N. O. C.*	13,411
9.	Dermatosis	13,396
10.	Non-siliceous dusts	12,256
11.	Lead and compounds	10,556
12.	Organic solvents	9,766
13.	Oils, fats and waxes	8,844
14.	Alkalies	7,102
15.	Sulphur dioxides	5,853
16.	Infections	4,063
17.	Mineral acids	4,028
18.	Lacquers and varnishes	3,218
19.	Heat and humidity	2,722
20.	Paints and enamels	2,542
21.	Sulphur and sulphides	3,360
22.	Coal tar products	2,072
23.	Inorganic acids	1,905
24.	Alcohols, esters and ethers	1,829
25.	Inks	1,771
26.	Chemicals N. O. C.*	1,659
27.	Organic acids	1,256
28.	Hydrogen sulphide	1,141
29.	Dyes	1,091
30.	Asbestos dust	881
31.	Chromium and compounds	830
32.	Cyanides	646
33.	Arsenic and compounds	625
34.	Aldehydes	575
35.	Cadmium and compounds	381
36.	Mercury and compounds	351
37.	Accelerators	247

The following recommendations are submitted by the Committee on Industrial Health for favorable consideration by the general membership of the state society:

1. The necessity for leadership and cooperation in the field of industrial health has been recognized by your committee, together with the realization of the importance of this phase of preventive medicine during this critical period of our national defense program. Furthermore it is the opinion of your committee that a long range program for conservation and improvement of the health of the worker should be seriously considered and it is therefore strongly recommended that a Section on Industrial Health be established with all the rights and privileges accorded to sections of the state medical society now in existence.

2. Your committee is of the opinion that clarification of the relationship between private and industrial practice is necessary and desirable. It is, therefore, proposed that the following objectives of industrial medicine be recognized:

(a) To determine the physical and mental fitness of employees for work. The industrial physician and organized medicine in general should make it clearly understood by industrial management and by employees alike that physical examination is not an instrument of elimination, but a practical method of job placement and is invaluable to every worker in the promotion of his physical welfare and in the reduction of all loss of working time due to sickness or injury.

(b) To maintain and improve the health and efficiency of those employed.

(c) To educate the worker in accident prevention and personal hygiene.

(d) To reduce lost time due to illness or injury.

It is further proposed that the state medical society endorse the following principles in the practice of industrial medicine:

(a) That pre-employment and periodic physical examinations be made only by qualified medical examiners.

(b) That reasonable first aid and advice for employees suffering from non-industrial injuries and illnesses while on duty be provided. For further care, however, the employee should be referred to his own private physician.

(c) That continuous effort should be made by the industrial physician relative to the education of the worker in accident prevention and personal hygiene.

(d) That efforts to eliminate or control all health hazards in the working environment should be initiated by the physician. This will require careful and regular inspection of the working environment, the various industrial operations and study of the materials used and produced.

(e) That the physician supervise all plant sanitation and all health measures affecting the employee while on duty.

[1] Courtesy of West Virginia State Department of Health, Bureau of Industrial Hygiene.

*N. O. C.—Not otherwise classified.

(f) That the use of approved hospitals should be insisted upon.

3. Your committee also recommends that representatives of the West Virginia State Medical Society should be authorized to attend the Annual Congress on Industrial Health conducted by the Council on Industrial Health of the American Medical Association. It is to be regretted that only two representatives from West Virginia were present at the last meeting, neither of whom directly represented the state medical society.

4. It is also recommended that the West Virginia State Medical Society go on record as being strongly opposed to the provisions of bills S-193 and S-509, introduced to the 77th Congress by Senator Murray of Montana. These bills would, in effect, provide that state labor departments, or other agencies charged with the administration of general labor laws of the state, shall administer industrial hygiene programs, and that the plans of such administration shall be approved by the Federal Secretary of Labor. Your attention is called to the fact that these bills provide for administration of a purely health function by an agency not equipped to handle public health matters; that there are already 31 state health departments, six city health departments and several county health departments which have divisions of industrial hygiene actively engaged in this work and that enactment of S-193 and S-509 will result in confusion, duplication of work, waste of public funds and will be detrimental to the proper administration of public health functions.

The above report and recommendations are respectfully submitted to the West Virginia State Medical Society for its favorable consideration by the Committee on Industrial Health.

J. J. BRANDABUR, *Chairman*,
HENRY BROWN,
GEORGE FORDHAM,
W. V. WILKERSON,
A. P. RINEHART,
J. W. CROSSON.

Necrology Report

Mary A. Baron Monroe, Wheeling . . . June, 1940
Fred P. Weltner, Charleston . . . . . Aug. 15, 1940
Rolla Camden, Parkersburg . . . . . Aug. 22, 1940
Thomas R. Hoge, Wheeling . . . . . Aug. 23, 1940
Jasper A. Moyers, Franklin . . . . . Sept. 1, 1940
William T. Highberger, Maysville . . Sept. 6, 1940
Charles B. Williams, Philippi . . . . . Sept. 9, 1940
Lawson Silas Henley, Huntington . . Sept. 16, 1940
Clermont E. Park, Parkersburg . . . . Oct. 10, 1940
Mortimer D. Cure, Weston . . . . . Jan. 1, 1941
Fleming Howell, Clarksburg . . . . . Jan. 9, 1941
Joseph A. Wood, Pratt . . . . . Jan. 9, 1941
Oliver H. Griffith, Wheeling . . . . . Jan. 15, 1941
Russell Arthur Salton, Williamson . . Jan. 20, 1941
Frank Theodore Dare, Wellsburg . . Jan. 21, 1941
Samuel F. Talbott, Morgantown . . Feb. 24, 1941
George A. Rigrish, Charleston . . . . . April 7, 1941
S. A. McConkey, Barboursville . . . . April 8, 1941
John M. Fadely, Pt. Pleasant . . . . . April 10, 1941

Requiescat in Pace!

Registration

B-R-T Society—Drs. R. J. Condry, B. I. Golden, W. G. Harper, C. H. Hall, S. G. Moore, Elkins; Hu C. Myers, Karl J. Myers, Philippi; Guy H. Michael, Belington; W. E. Whiteside, Parsons.

Boone County—Drs. W. V. Wilkerson, Prenter; Harold H. Howell, Madison; Paul R. Gerhardt, Van.

Brooke County—Drs. J. P. McMullen, Ray C. Otte, and H. L. Hegner, Wellsburg.

Cabell County—Drs. H. E. Beard, Wm. F. Beckner, James R. Bloss, Ray M. Bobbitt, J. J. Brandabur, V. L. Chambers, J. Russell Cook, D. J. Cronin, H. H. Fisher, Thomas G. Folsom, Lawrence B. Gang, Cole D. Genge, W. O. Grimm, J. A. Guthrie, W. D. Hereford, E. J. Humphrey, Jr., Jay L. Hutchinson, F. O. Marple, J. Hallock Moore, W. E. Neal, R. M. Sloan, Gilbert A. Ratcliff, A. G. Rutherford, Richard J. Stevens, Walter E. Vest, R. J. Wilkinson, C. A. Willis, C. B. Wright, R. M. Wylie, Huntington; G. D. Johnson, Spencer.

Central West Virginia—Drs. A. B. Bowyer, Elkview; J. M. Cofer, Bergoo; L. W. Deeds, J. C. Huffman, Buckhannon; John E. Echols, W. E. Echols, James E. McClung, James McClung, Jr., John N. Marquis, Richwood; M. T. Morrison, Sutton.

Doddridge County—Drs. A. Poole, R. S. White, West Union.

Eastern Panhandle Society—Drs. R. E. Clapham, T. K. Oates, C. G. Power, Marvin H. Porterfield, R. B. Talbott, Martinsburg; Elizabeth McFetridge, Shepherdstown.

Fayette Society—Drs. N. G. Angstadt, Fayetteville; O. D. Ballard, Cunard; W. P. Bittinger, Summerlee; Gilbert Daniel, Alloy; George Fordham, Powellton; L. R. Harless, Gauley Bridge; G. C. Hedrick, Glen Ferris; L. I. Hoke, Nitro; Ralph Hogshead, R. H. Jones, R. A. Updike, H. C. Skaggs, G. A. Smith and E. B. Thompson, Montgomery; C. G. Merriam, Beard's Fork; C. E. Watkins, Harvey; J. N. Reeves, J. F. Van Pelt, Oak Hill; C. F. Jackson, Milburn; M. A. Moore, Longacre; J. L. Roark, Powellton; L. Y. Peskoe, Boomer.

Greenbrier Valley—Drs. Herbert Duncan, D. G. Preston, Lewisburg; H. L. Goodman, H. D. Gunning, Ronceverte; C. F. McClintic, Williamsburg.

Hancock County—Drs. W. C. Boggs, Chester; A. B. Rinehart, L. A. Whitaker, Weirton.

Harrison County—Drs. B. S. Brake, W. T. Gocke, T. M. Hood, S. S. Hall, Frank V. Langfitt, Goff P. Lilly, L. E. Neal, Chester R. Ogden, Cecil O. Post, A. T. Post, Harry V. Thomas, J. Frank Williams, H. H. Haynes, R. T. Humphries, Clarksburg.

Kanawha County—(All of Charleston except other indicated)—Drs. Andrew E. Amick, M. Albrecht, R. L. Anderson, H. W. Angell, R. E. Baer, (South Charleston); H. A. Bailey, Harry E. Baldock, Ernest Ball, J. Bankhead Banks, Daniel Barber, Maxfield Barber, Jack Basman, Henry Baum, H. M. Beddow, S. L. Bivens, W. P. Black, T. H. Blake, (St. Albans); O. H. Bobbitt, M. L. Bonar, A. S. Brady, Jr., Henry M. Brown, I. E. Buff, C. N. Brown, (Widen); Robert King Buford, J. E. Cannaday, G. B. Capito, F. B. Carlson, Preston Champe, A. C. Chandler, V. T. Churchman, Sr., F. A. Clark, William L. Cooke, C. E. Copeland, L. E. Cox, J. Wm. Crosson, E. A. Davis, Rank O. Dawson, Dan Glassman, R. H. Dunn, (South Charleston); Leonard Eckmann, (South Charleston); H. M. Escue, R. I. Frame, (Sharples); J. W. Frazier, H. R. Glass, J. R. Godbey, Fred Gott, A. T. Gordon, (Spencer); Owen A. Groves, J. L. Hager, John B. Haley, P. A. Haley, R. O. Halloran, R. E. Hamrick, J. H. Hansford, (Pratt); W. L. Hardesty, O. M. Harper, (Clendenin); G. P. Heffner, E. B. Henson, David H. Hill, W. E. Hoffman, V. E. Holcombe, C. L. Houck and M. R. Houck, (Carbon); A. P. Hudgins, W. R. Hughey, J. Ross Hunter, R. A. Ireland, G. G. Irwin, Ralph J. Jones, E. V. Jordan, Russel Kessel, Ray Kessel, R. D. Ketchum, V. L. Lance, H. D. Law, J. P. Lilly, E. A. Litzinger, T. Paul Mantz, L. B. Mathews, U. G. McClure, Ralph McLaughlin, W. A. McMillan, W. O. McMillan, M. I. Mendeloff, O. N. Morison, L. H. Mynes, T. W. Nale, G. P. Naum, (Cedar Grove); J. W. Niedermyer, (Ward); E. W. Owen, (Spencer); R. E. Pence and J. T. Peters, (South Charleston); V. D. Peterson, W. W. Point, W. C. Polsue, C. W. Powell, Phillip Preiser, Robert B. Price, W. J. G. Putschar, Thomas G. Reed, F. C. Reel, P. H. Revercomb, G. C. Robertson, H. L. Robertson, W. S. Robertson, J. H. Robinson, J. U. Rohr, J. E. Rucker, C. N. Scott, Abraham Seletz, Earle Shamblen, A. A. Shawkey, W. F. Shirkey, J. W. Skaggs, (Nitro); Claude B. Smith, A. A. Smith, (Clay); E. P. Squire, Charles Staats, H. H. Staats, W. C. Stewart, L. N. Strickland, H. A. Swart, B. H. Swint, H. G. Thompson, W. A. Thornhill, Jr., Pat A. Tuckwiller, Rome H. Walker, C. T. Whiteside, (Kayford); W. V. Wilkerson, (Prenter); A. A. Wilson, W. B. Wilson, H. B. Wise, R. E. Woodall, W. F. Work, Edwin O. Vaughan, (St. Albans); A. Robert Stork, James H. Wolverton.

Lewis County—Drs. C. R. Davisson, Ralph M. Fisher, A. F. Lawson, Albert E. Long, J. E. Offner, Theresa O. Snaith, George Snyder, Weston; C. B. Rohr, Alum Bridge; W. T. Smith, Glenville.

Logan County—Drs. L. L. Aultz, J. W. Carney, W. P. Hamilton, I. M. Kruger, Logan; J. W. Lyons, J. Lester Patterson, Holden; E. H. Starcher, Earling; Dana T. Moore, Stirrat; H. Van Hoose, Mallory; B. D. Smith and U. C. Lovejoy, Omar.

Marion County—Drs. J. L. Blanton, Carl J. Carter, John P. Helmick, C. O. Henry, H. S. Keister, L. R. Lambert, L. D. Norris, Fairmont; Kyle Y. Swisher, Fairview; George H. Traugh, J. P. Trach, J. R. Tuckwiller, Fairmont.

Marshall County—Drs. Charles G. Morgan, Harold B. Ashworth, Moundsville.

Mason County—Drs. Max Koenigsberg, Point Pleasant; C. W. Petty, Hartford.

McDowell County—Drs. J. Howard Anderson, Hemphill; N. H. Dyer, Bartley; George P. Evans, Iaeger; J .C. Hutchinson, Welch.

Mercer County—Drs. Ben W. Bird, E. L. Gage, Fred F. Holroyd, Frank J. Holroyd, J. I.

Markell, Thomas Vermillion, Princeton; Henry C. Davis, Harry G. Steele, R. O. Rogers, Albert H. Hoge, E. W. Horton, F. S. Richmond, W. H. St. Clair, Bluefield.

Mingo County—Drs. Geo. W. Easley, L. F. Boland, Williamson.

Monongalia County—Drs. G. R. Maxwell, T. Jud McBee, French R. Miller, J. C. Pickett, C. B. Pride, R. R. Summers, James Thompson, John H. Trotter, Eldon B. Tucker, E. J. Van Liere, Morgantown.

Ohio County—Drs. Russell B. Bailey, Russell C. Bond, John W. Gilmore, Richard D. Gill, E. Lloyd Jones, D. A. MacGregor, Wm. C. McCuskey, Howard T. Phillips, Robert J. Reed, Jr., Howard R. Sauder, W. M. Sheppe, G. L. Vieweg, Jr., Howard G. Weiler, Wheeling.

Parkersburg Academy—Drs. Holmes Blair, A. Morgan Dearman, Welch England, Milton A. Gilmore, William R. Goff, Charles L. Goodhand, Thomas L. Harris, W. J. Judy, A. R. Lutz, Roy Ben Miller, Wm. D. Tillson, K. L. Van Horn, James L. Wade, R. H. Wharton, Andrew C. Woofter, S. D. H. Wise, Parkersburg; J. M. DePue, R. C. Newman, C. W. Shaffer, Spencer; Richard Hamilton, O. L. Quillan, St. Marys; James P. Jones, Pennsboro; P. C. Starkey, Ravenswood.

Potomac Valley—Dr. R. W. Love, Moorefield.

Preston County—Dr. David Salkin, Hopemont.

Raleigh County—Drs. D. C. Ashton, R. G. Broaddus, E. Newton Dupuy, L. M. Halloran, K. M. Jarrell, Henrietta L. Marquis, B. K. Peter, L. G. Houser, Clark Kessel, Beckley; T. R. Coleman, East Gulf; Ross P. Daniel, Pemberton; S. A. Ford, Edwight; J. O. Williams, St. Albans; F. J. Moore, Affinity; D. M. Ryan, Hinton; J. M. Teter, Beaver; W. C. Covey, Winding Gulf.

Summers County—Dr. W. L. Van Sant, Hinton.

Wetzel County—Dr. B. F. Matheny, Hundred.

Wyoming County—Drs. Frank H. Penn, J. F. Biggart, Mullens.

Other registrations (visitors and guest speakers)—Drs. B. V. Blagg, South Charleston; S. M. Bull, Spencer; Miss Katherine E. Cox, (State Hygienic Laboratory), Charleston; Dr. Morris Fishbein, Chicago; Dr. R. R. Sayers, Washington, D. C.; W. G. Leaman, Jr., Philadelphia; Stanley Gibson, Chicago; W. K. Mackey, Chesapeake,

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GYNECOLOGY—Two Weeks Intensive Course starting October 20th. One Month Personal Course starting August 25th. Clinical Course every week.

OBSTETRICS—Three Weeks Personal Course starting August 4th. Two Weeks Intensive Course starting October 6th. Informal Course every week.

OTOLARYNGOLOGY—Two Weeks Intensive Course starting September 8th. Informal and Personal Courses every week.

OPHTHALMOLOGY—Two Weeks Intensive Course starting September 22nd. Informal Course every week.

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News Omitted

Due to the Convention Transactions being published in this issue of the JOURNAL, it was necessary to omit some of the County Society, Auxiliary and Military News. These items will be published in the July issue.

Obituaries

Doctor Samuel F. Talbott

Dr. Samuel F. Talbott, well-known Morgantown physician died at the City Hospital, February 24, from the effects of a paralytic stroke.

A native of Frenchton in Upshur county, Dr. Talbott received his early education in schools in that county. He later attended Shepherd State Teachers' College and received a teaching certificate. Dr. Talbott graduated from West Virginia University in 1919 with a B. S. degree and graduated from Cincinnati Medical School in 1921. He interned at the Thomas D. Dee Memorial Hospital at Ogden, Utah. He practiced medicine in West Virginia since 1922.

Doctor J. O. McQueen

Dr. John Owen McQueen, aged 68, was born in Hookersville, Nicholas County, West Virginia, graduated from Kentucky School of Medicine, 1892, died February 14 at his home in Summersville, of pneumonia.

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1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph., Gon. & Ven. Dis., 23, 201 (March), 1939.

A complete technique of treatment and literature will be sent upon request

*Silver Picrate is a definite crystalline compound of silver and picric acid. It is available in the form of crystals and soluble trituration for the preparation of solutions, suppositories, water-soluble jelly, and powder for vaginal insufflation.

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TWENTY-FIVE YEARS AGO

(From the June, 1916, Journal)

Original articles were written by Dr. A. P. Butt, Davis; Dr. E. D. Wells, Hinton, and Dr. J. E. Cannaday, Charleston.

* * * *

The forty-ninth annual meeting of the West Virginia State Medical Association has passed into history. The members of the Ohio County Medical Society did themselves proud as hosts of the State Association. For a number of years we have been attending these annual meetings and we cannot but feel that each year the Association grows stronger; each year we become a more closely knit body, and that our scientific programs increase in value to the men on the "firing line."

It would not be possible for us to describe in detail all the things done for us by the physicians of Wheeling. Clinics were held in both of the hospitals each day by various members of the profession, and we feel sure that the very high class of work which we saw done by our Ohio county confreres compares most favorably with that of any state in the union.

The list of newly elected officers is as follows: President, Dr. J. E. Rader, Huntington; first vice president, W. S. Young, Sistersville; second vice president, E. H. Thompson, Bluefield; third vice president, Reed M. Baird, Wheeling; secretary, J. H. Anderson, Marytown; treasurer, H. G. Nicholson, Charleston.

Members of the Council: First district, J. W. McDonald, Fairmont; second district, C. H. Maxwell, Morgantown; third district, M. T. Morrison, Sutton; fourth district, R. H. Pepper, Huntington; fifth district, W. H. St. Clair, Bluefield; sixth district, P. A. Haley, Charleston. Delegate to the American Medical Association, Chester R. Ogden.

* * * *

County Society Proceedings

MERCER COUNTY

Dr. Fairfax reported a case of obstetrics where he had delivered triplets and at that time they were living and doing well. Two girls and one boy. At the time of birth, each of the girls weighed five and one-half pounds and the boy six pounds. At the end of three months the girls weighed nine pounds and the boy thirteen. The father wrote to

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Approved for Serology by the West Virginia State Department of Health.

Weekly Out-Patient Tumor Clinic as suggested by the American College of Surgeons.

the governor and asked him if the state offered any support for triplets and the governor informed him that the legislature had made no provision to take care of triplets in the State of West Virginia.

* * * *

I believe I speak the sentiments of every member present at the society when I say that next on the program was Dr. T. H. Becker, who read us one of the most thorough papers from practical experience, on the subject of "Anesthesia", which was discussed by Drs. Horton, McSparran, Steele, Easley and Thompson.

* * * *

In closing the discussion Dr. Becker said that he had not given chloroform for several years, but did not think it was entitled to the condemnation it received. He said that chloroform kills then and there, and after the use of ether, the patient dies with something else later, a week or more, which has caused me to believe that ether is entirely the safest. Dr. Thompson, who always praises everyone for his good deeds, congratulated Dr. Becker very highly and said it was one of the best papers he had heard for some time.

—H. G. Steele, Secretary.

* * * *

From Dr. A. P. Butt's presidential address:

I am glad to say that, in my opinion, fraternal feeling is on the increase all the time. There has been a wonderful improvement in this respect in the past few years. Formerly it was the exception for physicians to work together, now it is the rule.

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County Society News

Boone County

Boone county has only fourteen physicians within its borders but all fourteen are members of the state and county societies.

The April meeting was held at Racine with twelve of the members present. Drs. G. G. Irwin and W. E. Hoffman of Charleston were the essayists of the evening and we had an excellent program. Dr. W. V. Wilkerson was elected as alternate to the state convention.

HAROLD H. HOWELL, *Secretary.*

Cabell County

The regular monthly meeting of the Cabell County Medical Society was held Thursday, May 8, at 8:15 p. m., at the Hotel Prichard.

Dr. Lewis Hermann of the Christian Homes Hospital, Cincinnati, Ohio, a widely recognized authority on peripheral vascular diseases, spoke on that subject.

COLE D. GENGE, *Secretary.*

Central West Virginia

The Central West Virginia Medical Society held its meeting at Richwood, April 3, 1941. John E. Echols was in charge of the program and presented the following speakers: F. B. Carlson, M. D., of Charleston, on "Cancer of the Cervix"; R. H. Walker, M. D., Charleston, on "Ulcers and Cancers of the Stomach", and J. Ross Hunter, M. D., Charleston, on "Cancer of the Breast."

Following these addresses, a business session was conducted chiefly dealing with revision of the constitution and by-laws.

The next meeting will be held at Bergoo, with Drs. Cofer, Hunter and Godman as committee.

A. B. BOWYER, *Secretary.*

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Kanawha County

The regular monthly meeting of the Kanawha Medical Society was held at the Daniel Boone Hotel, Charleston, on Tuesday evening, April 8, 1941. The essayist of the evening was Dr. Walter E. Vest of Huntington who gave a wonderfully interesting and entertaining paper on "Shakespeare in Medicine." As the subject was of general interest, many doctors' wives and other visitors were in attendance.

Preceding the meeting, a dinner was held for Dr. Vest at the Daniel Boone Hotel at 7:00 o'clock with approximately 20 society members in attendance.

W. A. THORNHILL, *Secretary*.

Logan County

The Logan County Medical Society held its regular monthly meeting on the evening of April 9, 1941, at the Aracoma Hotel, Logan. Dr. J. W. Carney, vice president, presided. Dr. Vernon L. Peterson, Charleston röentgenologist, gave an interesting discussion, illustrated with lantern slides, on the subject, "The Value of X-ray Examination to the General Practitioner in Gastrointestinal Disorders."

Following the scientific program, a short business session was held and Dr. Walter E. Brewer was elected alternate delegate to the Charleston state meeting, succeeding Dr. Fred E. Brammer, who has been called to active military service.

Born to Dr. and Mrs. J. W. Carney, April 5,

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an eight pound son, Joseph Willis, Jr. Born to Dr. and Mrs. W. P. Hamilton a seven pound son, James Page, on April 8.

Dr. D. T. Moore of Stirratt is rapidly recovering from an operation for partial bowel obstruction.

W. P. HAMILTON, *Secretary.*

Mercer County

The Mercer County Medical Society held its regular monthly meeting at the Municipal Building, Bluefield, on March 20, 1941.

The proposal of the Farm Security Administration that their clients be placed under a prepayment form of medical care was tabled indefinitely because of the inaccessibility of their clients.

Dr. Charles St. Clair brought an invitation from the Tazewell County Medical Society for a joint meeting with the society. On motion of Dr. Rogers, the society voted to meet with the Tazewell county doctors in June.

An advisory committee to the Department of Public Assistance was appointed, consisting of Drs. Frank J. Holroyd, Daniel Hale and L. J. Pace.

The program consisted of a case history of coincidental massive pneumonia and coronary thrombosis by Dr. O. G. King. This was discussed by Drs. R. O. Rogers and L. J. Pace.

Dr. L. W. Hewitt read a paper on "Renal Complications From the Use of Sulfathiazole and Sulfapyridine in Pneumonia." This was discussed by Dr. O. G. King, Dr. R. O. Rogers and others.

FRANK F. HOLROYD, *Secretary.*

Raleigh County

The Raleigh County Medical Society held its regular monthly meeting on Thursday, April 17, 1941 at Beckley.

Dr. J. Wm. Crosson, director, Bureau of Industrial Hygiene was the guest speaker. His subject was "Industrial Hygiene and the Practicing Physician." There was a very active discussion of his paper by members of the society.

The society endorsed a proposition offered by the Red Cross to establish and maintain a free blood donor register in the county.

Dr. J. Hoge Woolwine, Jr., was admitted into the society.

CLARK KESSEL, *Secretary.*

THE WEST VIRGINIA MEDICAL JOURNAL

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HALLUX VALGUS

By RANDOLPH L. ANDERSON, M. D., B. S., F. A. C. S.
Charleston, West Virginia

HALLUX VALGUS is characterized by an angulation laterally of the great toe at the metatarsophalangeal joint. The medial side of the head of the first metatarsal bone becomes enlarged because of the consequent irritation and an exostosis is formed. Nature then forms a bursa to protect this exostosis and the bony prominence and its overlying bursa or sac is called a bunion.

It is now generally considered that the etiology of hallux valgus or bunion formation is essentially anatomical. Dixon and Diveley, in their excellent book, state that "the basic cause of hallux valgus in the vast majority of cases lies in a weakness or defect in the architecture of the foot." There are three important weaknesses:

First, the first metatarsal bone may diverge from the second metatarsal, the so-called metatarsus primus varus. This makes for a wide foot and the first metatarsal becomes hypermobile and unstable. This results in too great a thrust of the great toe against the ground and the great toe may be thrust laterally. This condition is aggravated by narrow or pointed shoes.

THE AUTHOR

Dr. Anderson, graduate Harvard, 1923; interned Boston City Hospital, pediatrics and surgery; Children's and Massachusetts General Hospital in orthopedic surgery; American Academy of Orthopedic Surgeons and Diplomate of American Board of Orthopedic Surgery.

Secondly, this first metatarsal may be hypermobile without diverging from the second metatarsal. This brings about the same condition previously described.

Thirdly, flattening of the longitudinal and anterior arches causes faulty mechanics at the metatarsophalangeal joint of the great toe. The broadening of the anterior arch especially places tension on the oblong and transverse heads of the adductor muscle of the great toe which arises from the middle and lateral portion of the other metatarsal bases and their ligaments. This increased tension pulls the great toe over towards the lateral side of the foot which creates the condition known as hallux valgus.

Thus, we have the familiar picture of a flattened foot which has a prominent great

toe joint with an overlying bursa and with the distal phalanx of the great toe often found under the second toe. The bursa itself may become large and filled with fluid, and may at times become irritated or even infected.

In a previous paper a study was made of the hallux valgus cases treated on the orthopedic service at the Massachusetts General Hospital from 1921-1926. A total of eighty-five cases were operated upon in this series with a total of 145 feet. The proportion of women to men was roughly two and one-half to one. The age varied from fifteen to eighty-one years. Practically all of the younger cases occurred in women. The average duration of symptoms before operation was ten years.

SYMPTOMS

The most common presenting symptom is pain over the site of the bunion. This pain is aggravated by exertion and also usually by abrupt weather changes.

Deformity is the other symptom found commonly, and men may complain as much as women. This is due to the fact that it becomes a problem frequently to obtain properly fitted shoes because of the projecting bone and bursa.

The faulty mechanics of the foot cause callus formation under the ball of the foot which is usually painful. At times, pain in the longitudinal arch is observed also.

Arthritis of the metatarsophalangeal joint is found frequently. This often accounts for part of the pain in this joint. In the Massachusetts General Hospital series, arthritis, with some evidence of spur formation, was found in seventeen of ninety-three x-rays taken. In this series thirty cases showed symptoms such as swelling, redness, and heat attributed to arthritis. Of these, ten cases had positive x-ray findings, thirteen were negative and ten had not been x-rayed. The cases showing arthritis are less apt to get complete relief from pain and thus the prognosis must be guarded.

The treatment of hallux valgus should be palliative only when the individual is prevented by age, by constitutional symptoms, or by economic considerations, from undergoing operation. Age may not necessarily be an obstacle, however, as one of my patients was eighty-one years old and there have been others in their seventies.

Palliative treatment locally consists either of the commercial so-called "bunion plasters" or of the use of a small doughnut-shaped piece of felt over the great toe joint which is held in place by waterproof adhesive.

It is also essential in palliative treatment, as in postoperative treatment, that the mechanics of the foot be corrected so far as possible.

Attention must be given to the proper selection of shoes. It is essential that the walking and working shoe be of the Oxford type, that is, laced and not of the strap or "pump" variety. Oxford shoes give better support, of course, than the "pump" or tie type.

The height of the heel best suited for most women is the so-called "military heel." Some women can wear a lower heel, of course, and men have no difficulty wearing a lower heel.

The line of the shoe must be straight on the medial side and not pointed at the toes. The shoe must be of the proper last for that particular individual because, after all, one cannot expect every foot to conform to any "pet" make of shoe. The fitting of the shoe must be carefully done. The length of the shoe should be one-half inch longer than the foot.

ARCH SUPPORTS

It is essential, in most cases, to correct the longitudinal and anterior relaxation or flattening of the foot by appropriate longitudinal and anterior arch pads or supports. It is my practice to trace the foot and then mark the locations where the longitudinal and anterior arch pads are to be placed. The longitudinal arch pad should extend from about one and one-half inches in front of the back of the heel to a point just back of the head of the first metatarsal and should extend laterally about two-thirds of the way across

to the lateral border in an elliptical fashion. The anterior arch pad is located so that pressure is made just back of the heads of the metatarsals. This pad extends laterally from a point just lateral to the first metatarsal to the fourth metatarsal. These pads are usually made of sponge rubber.

It is necessary at times to use metal arch supports. This is true especially in the very large or obese individual. These metal supports are expensive and must be made carefully from a plaster mold taken of the foot.

The ordinary commercial steel arch supports seldom fit and are mentioned only to be condemned. There would not be so much temptation for the public to use these appliances obtained from shoe salesmen if physicians generally took more interest in the foot complaints of their clientele.

It might be well to add also that stiff shank shoes are preferable to the flexible shank shoes since most of our walking is done on hard, unyielding surfaces.

Exercises for strengthening the toe muscles and the muscles on the inner side of the foot are helpful and should be urged.

So much for the mechanical treatment of feet afflicted with bunions. No apology need be given for this discussion because it is lack of proper consideration for these points that has led the public to accept operative procedures with misgivings. In my opinion, most recurrences are due to failure to provide against the return of the mechanical faults which have lead to the bunion deformity originally.

OPERATIVE PROCEDURES

There are a number of operative procedures from which to choose. A word of warning must be issued against any procedure which removes a large portion of the head of the first metatarsal bone since this is the front pillar of the longitudinal arch and its loss is an irreparable one from the standpoint of proper weight-bearing. It has been my misfortune to see several end results of such operations.

Willis Campbell states that operative treatment should include the following measures:

"1. Correction of the valgus deformity at the metatarsophalangeal joint.

"2. Removal of the exostosis, or excess bone, on the medial aspect of the first metatarsal head, and in some instances, the adventitious bursa as well.

"3. Correction, if possible, of the metatarsus primus varus deformity (widening of the space between the first and second metatarsal bones as a result of medial angulation of the first metatarsal bone at its articulation with the cuneiform bone) which is frequently associated with hallux valgus.

"4. Postoperative treatment of the depression of the anterior arch and associated metatarsalgia."

The same author also discusses the three types of operations used: "(1) plastic procedures, (2) excisions of bone, and (3) measures to correct the metatarsus primus varus combined with other plastic procedures."

McBRIDE OPERATION

The McBride operation typifies the plastic type. The adductor hallucis tendon is detached from its insertion on the lateral side of the first phalanx of the great toe and is reinserted to the head of the first metatarsal bone. The exostosis is then removed from the medial side of the head of the first metatarsal and the capsule plicated to hold the great toe in correction.

The modified Mayo operation consists of removal of the medial portion of the head of the first metatarsal with its exostosis instead of the whole head as originally described. The head is then remodeled. A u-shaped incision has been made in the bursa and the bursal flap is then turned into the joint space and sutured to the lateral capsule of the metatarsophalangeal joint.

The Keller operation consists of operative removal of the bony exostosis. Next, the proximal one-fourth of the proximal phalanx of the great toe is resected. The raw surface is smoothed and a purse string suture of the soft parts intervening is placed between this

phalanx and the head of the first metatarsal, thus preserving joint function.

The Keller operation has been found to be the most effective in my hands.

It is not necessary to remove the bursa routinely as this shrinks ordinarily after its function, that is, the protection of a bony prominence is removed.

A plaster splint is used for about two weeks. Exercises for flexion and extension of the metatarsophalangeal joint are begun after the sutures are removed, ten or twelve days postoperative. It is especially important to preserve flexion of the first metatarsophalangeal joint since this is important in ordinary walking.

The patient can usually walk in fourteen to seventeen days with the top of the shoe cut out over the great toe. There should be no walking in bedroom shoes at any time. Ordinary shoes can be worn usually in about three weeks.

The series studied at the Massachusetts General Hospital showed that pain was relieved in about 90 per cent of the cases. My own series has shown similar results.

The Keller operation relieved symptoms more effectively than other procedures used.

Severe deformity is practically always relieved by operation and proper postoperative care will prevent recurrences.

SUMMARY

(1) Hallux valgus, or bunion formation, is essentially due to faulty anatomical mechanics of the foot.

(2) It is promoted by improper footwear.

(3) It can be relieved by well selected operative procedures in approximately 90 per cent of the cases.

(4) Recurrences can be prevented by proper operative technique and careful postoperative care of the mechanics of the foot.

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New Electron Microscope

Illustrative of the constantly expanding horizon of medical knowledge is the preliminary report in *The Journal of the American Medical Association* for May 31 by Frances I. Seymour, M.D., and Moses Benmosche, M.D., New York, on their observations of the spermatozoa or male germ cells as examined under the new electron microscope.

The two physicians point out that under the ordinary microscope nothing more has been revealed regarding the spermatozoa than the contour of the head and the number and approximate length of tails. All the finer details were hopelessly concealed and what little was known about it could be summed up as motility or non-motility, general appearance as seen with magnifications under 2,000 and the numbers of spermatozoa per cubic centimeters of volume of semen.

"For many years," they say, "it was assumed that motile spermatozoa were fertile. This assumption has since been discredited. Some authors have represented the body of the spermatozoon as being absent, just a head and tail. Others have so far stretched their imagination as to draw complicated spirem arrangements in the midsections."

The two authors obtained two sets of photographs of the spermatozoon, the magnification of one being 13,500 diameters and the other 27,000. They found it to consist of a head, a body and a tail, with the head shaped like a pear on the vertex or crown of which is a crater-like notch.

"The old conception of the neck must now be changed," they declare. "We are forced to call the neck the body of the spermatozoon, which appears as a highly complex and segmented structure. There appears to be a heretofore undiscovered but definite irregularity at the vertex of the head of the spermatozoon which may be a distinct organ, such as a suction apparatus. The tail is apparently a great deal longer than has been previously supposed, and it contains variations in structure which may be functional in character.

"It is possible that the penetration of the spermatozoon into the ovum (the female egg) is effected by means of a specialized apparatus situated at the vertex of the head of the human spermatozoon.

"In view of the number of details as revealed in a spermatozoon magnified 27,000 diameters by means of the electron microscope, it can be safely predicted that future investigations will undoubtedly clear up old problems, and change our present conception of them."

PLASTIC SURGERY OF THE NOSE AND FACE*

By EDWARD D. KING, M. D.
Cincinnati, Ohio

Plastic surgery of the nose and face is a highly specialized field and may seem of little interest to a general group. However, due to the increasing interest on the part of the public and owing to the number of automobile accidents which involve the face, cooperation is essential between the general man and the surgeon. Lay magazines publish a great deal of information on medical subjects, and for the most part, these expositions tend to confuse the public instead of helping. Certainly it is important for the general surgeon and general practitioner to know what should be done and what should not be done at the time of an accident. As an example, I believe that it is better to use adhesive plaster to bring wounds of the face together than to use heavy needles and sutures or metal clips. While early care to the injured part is valuable, if repair is clumsy and inadequate, it is better to delay until the proper facilities are at hand.

INDICATIONS FOR SURGERY

Plastic surgeons are importuned frequently to perform trivial corrections for imaginary defects which are best let alone. Due to the publicity which all types of surgery receives today, the lay mind is much confused as to the indications for surgery. Most people believe that skin grafting and removal of wrinkles and scars can be performed in a short session in a surgeon's office, much the same as beauty treatments are administered. The plastic surgeon must safeguard the interests of the patient, and at the same time protect himself from unjust criticism by explaining fully to each patient the nature of the operation, what it will accomplish, and the risks involved. When prospective candidates for plastic surgery are told frankly that the face-lifting operation is a hospital procedure of major importance, the determination fades promptly in most instances. When individuals with trivial or imaginary defects are told of the risks involved, they most often agree to let well enough alone. This must not deter the surgeon, however, from rendering services to those serious individuals who are entitled to consideration because of their occupation, or because of marked deformities. The successful removal of deforming wrinkles and pads in the face and neck is a great boon to these people.

It is a prerequisite that the indications for operation must be pronounced, and that a fair chance of improvement be present. Accurate records must be kept in plastic cases in order to evaluate results. Certainly good photographs are highly essential, and sometimes casts and drawings must be utilized. The operations should be done under the strictest surgical precautions, and therefore hospitalization is necessary, and should be insisted upon even when the procedure is minor in character, because only by such methods can plastic surgery be elevated from the level of charlatanism and quackery.

THE AUTHOR

Dr. King, graduate University of Cincinnati College of Medicine; interned Good Samaritan Hospital; attending otolaryngologist at Good Samaritan, Jewish and Children's Hospitals, Cincinnati; Associate Professor Otolaryngology, University of Cincinnati; American Academy of Ophthalmology and Otolaryngology; Past President, Cincinnati Academy of Medicine.

*Read before the Harrison County Medical Society, Clarksburg, West Virginia, March 6, 1941.

TREATMENT OF RECENT INJURIES

The large number of automobile accidents in this country call for the services of the surgeon who is especially qualified to repair face injuries. So many authors have described these injuries in detail that it is hardly necessary for me to give this phase of the subject very much attention. It is not superfluous, however, to reiterate the principles which underlie the handling of recent injuries, because the proper treatment will obviate frequently prolonged and tedious intervention long after the accident. Sometimes the injuries to the nose and face are of minor importance at the time of the accident because of more serious bodily injuries. But do not forget that the deformities which result from facial injuries will be of far more importance to the patient once recovery is in sight, than the other injuries which are not visible. At any time within a week or even ten days, the fractured nose or facial bones may be adjusted successfully without much manipulation, whereas if left for a future correction may entail much suffering for the patient, and prolonged and possibly unsuccessful effort for the surgeon. Lacerations of the face should be cleaned thoroughly. All foreign material should be removed completely, and the edges of the wounds brought together carefully and accurately by means of fine needles and fine sutures. Whenever deep lacerations are present, drainage should be provided. The bones of the face should be inspected carefully. The x-ray readings should not be depended upon for diagnosis, but careful inspection and palpation should disclose fractures and dislocations. Displacements of the nasal and malar bones can be corrected very simply by means of lifting the edge of the bone from the inside with blunt instruments and using the finger on the outside. Sometimes the nasal bones and the ascending processes are comminuted to such an extent that the adjustment is not possible without splinting. In these cases it is necessary to use a plastic skull cap for an anchor and attach wire splints covered with rubber to the cavity of the nose. The same apparatus may be employed for holding the malar or superior maxilla forward in fractures of these structures. If we follow the principle that early and careful attention to facial injuries is necessary, we will save much time and trouble.

I believe that a word should be said about injuries to the nose in infancy and childhood.

Lop-ears.

Result after the removal of skin and cartilage.

Frequently serious injury to the nasal structures are neglected in children because very little deformity is evident until the nose is developed. In all injuries to the nose in children, a careful inspection of the septum and tip of the nose should be made, and adjustments of these structures should be made at once in order to prevent marked deformity. The septum of the child can be lifted back into place, and the nasal bones manipulated soon after the injury.

DELAYED CASES

Delayed cases fall into two groups—deformities of the bony structures, and malformations of the cartilages. The old fractured nose must be severed from its attachment by sawing through the ascending processes and mobilizing the nose completely. A septal resection is almost always a necessary preliminary to the refracture operation. It can be done at the same time, and if neglected the nose is more likely to shift from the midline during the healing process. Deviations from the midline may be confined to the bony portion or may involve the cartilage, or the cartilage alone may be deviated. The cartilage deviation is more difficult to relieve. The most satisfactory method in my hands is that described by Safian, wherein the upper lateral cartilages are freed from the septum and the septum reunited to the upper lateral cartilage on the side opposite the deviation, after a strip has been removed. The nose must be held in place for about two weeks following operation by means of splints and mechanical devices.

CARTILAGE IMPLANTS

It is not enough to depend on inspection and palpation of the external nose following injuries, because the septum may be dislocated without apparent injury to the external nose. Very often abscess formation occurs in the septum following injury. It must be recognized and treated if serious deformity is to be avoided. These cases, which are all too numerous, require cartilage implants. As a rule the dorsum of the nose is saddle-shaped and the tip depressed so that the nose assumes an ugly flattened appearance. A small transplant of cartilage into the dorsum with a strip inserted into the columella produces a most satisfactory result. At times the nasal bony arch is flattened and wide so that the nasal bones must be severed from their attachment and lifted into place previous to the insertion of the cartilage transplant.

Large hump with hypertrophy.

The hump was removed—the nasal bones fractured inward. The upper lateral cartilage reduced, and the nose shortened.

Deformities of the nose which are congenital in origin must be considered by the plastic surgeon, because it is self-evident that the patient who suffers from a deformity of the nose is ever conscious of the disfigurement, and looks to surgery to relieve the anguish and self-consciousness caused by such a prominent defect. The hump nose is one of the most common deformities. Here the entire skin and subcutaneous tissue must be dissected loose and lifted up so that the hump can be removed under direct vision. The removal of the hump may change the appearance of the nose so that it may be necessary to narrow and shorten it. The surgeon must be prepared to carry out whatever procedures will give the desired result.

Deformities of the nasal tip must be considered in a special category because of the delicate and intricate structures involved. When defects are present as a result of injury or disease, skin flaps must be employed to fill in the gaps. Sometimes simple procedures are adequate for the reduction in the size of the alar cartilages. Great precision must be exercised in order that uniformity may be obtained on both sides. The raising or lowering of the tip may not involve much surgery, but deformities of the cartilages themselves are extremely difficult to correct. As has been stated previously, the proper evaluation of the deformity, with a proper perspective of what surgery will accomplish is the chief requisite.

FACE SCARS

Scars of the face can be removed successfully by excision and careful adaptation of the wound edges. Before undertaking the task, it is well to know something of the history of the patient in relation to the habit of healing. Some patients heal with a tendency to keloid formation, and no matter how well a job is done, may develop ugly scar tissue. This healing habit may be inferred sometimes by other scars, such as an appendix or other operation. As far as is known there is no prophylaxis. Dorrance has suggested thyroid extract and some authors suggest the use of x-ray following the operation. Experience with these measures has not been sufficiently extensive to warrant any definite conclusion. The essential precautions are fine needles, fine sutures, and no tension. With these principles in mind and followed rigidly, the scar can be improved. Large scars, the result of burns or the removal of angiomas

Scar of angle of nose and mouth, result of angioma and radium. Scar removed by degrees. Picture shows a pedicle flap removed from the skin of the neck and implanted in the remaining defect, with great success.

by radium or x-ray, tax the ingenuity of the surgeon to obtain improvement. As a rule, new skin must be employed. The scar can be excised and the edges undermined and brought together. The skin of the face and neck may be undermined and shifted to cover a large defect. The removal of the scar by degrees is a simple and satisfactory method in moderate sized scars. It can be removed in two or three stages with excellent results. In large scars, skin must be used to cover the defect. In women the skin of the forehead may be used in the form of a transfer flap. Wolfe grafts are extremely valuable and should be used whenever possible. They are especially useful for small defects where the skin behind the ear may be employed for the graft. Wolfe grafts from the other parts of the body should not be used on the face if possible to avoid it for the difference in the texture of the skin makes the graft unsightly. Tubed pedicle flaps may have to be made for some cases. The flaps may be taken from the neck or chest, or even from the abdomen. The greatest care in technique must be observed in carrying out any of these methods.

Plastic surgery of the ear is not very far advanced as far as the reconstruction of the external ear is concerned. However, there are corrective procedures which are designed to improve the appearances of the ear greatly. Lop-ears are most unsightly and very often a source of great worry to the patient. The careful excision of skin and cartilage and proper alignment of the structures will produce marked improvement in these cases.

SUMMARY

The importance of the careful attention to all injuries involving the face is obvious, as fractures in this area may be overlooked readily. The early attention to injuries in this area has been emphasized. Once having made a diagnosis of fracture of the nose and nasal bones, very painstaking efforts must be made to replace them. On account of the large number of automobile accidents, injuries to the face and head require special knowledge and training. With the greatest amount of experience and effort, it is often difficult to restore completely the nose and face to its proper position and appearance.

The scar of the entire right side of the face, with atrophy of the bony structures, due to angioma and radium.

Repair with tubed pedicle flaps from the neck and chest.

SYMPATHETIC BLOCK IN TREATMENT OF THROMBOPHLEBITIS

By J. W. CARNEY, M. D.
Logan, West Virginia

ACUTE THROMBOPHLEBITIS with its disabling and sometimes quite serious complications is a condition that responds to sympathetic block so well that I feel it is proper to give this report.

In 1939, Ochsner and DeBakey reported on the treatment of thrombophlebitis by novocaine block of the sympathetics. They explained the probability of the symptoms of this condition resulting from vasospasm set up by a vasomotor reflex originating in the thrombosed venous segment, and held that by blocking the sympathetic ganglia with novocaine, this reflex could be broken.

They found that immediately following the injection, there was complete relief of pain, the temperature generally declined to normal in three or four days, the swelling diminished to normal, and the period of convalescence was two weeks or less instead of the usual six or eight weeks. One to three injections usually sufficed to bring about this result.

Since most instances of thrombophlebitis occur in the lower extremity, the lumbar sympathetics are the ones usually blocked.

The technique of injection of the lumbar ganglia as given by Ochsner and DeBakey is as follows:

Skin wheals are raised with one per cent novocaine at points approximately two to two and one-half fingerbreadths lateral to the upper part of the spinal processes of the first to the fourth lumbar vertebræ. These points lie directly over the transverse processes of the corresponding vertebræ. A 20 to 22 gauge needle eight to ten cm. in length is used. The needles are inserted vertically through each wheal until the transverse process of the corresponding vertebra is reached, a distance of four to five cm. The direction of the needle is then changed slightly either superiorly or inferiorly and is pointed slightly toward the midline. The needle is then inserted for another two and one-half fingerbreadths so that the point impinges against the anterolateral surface of the body of the vertebra. Five c.c. of one per cent novocaine is injected. Before injection aspiration should be done to avoid injection into a blood vessel. In a few minutes after a satisfactory injection the extremity on this side becomes warm and dry.

THE AUTHOR

Dr. Carney, graduated Medical College of Virginia, 1933; interned Hatfield-Logan Hospital and Logan Clinics; Logan General Hospital Staff.

CASE REPORTS

The following reports are of two cases that I have treated by this method with exceedingly good results:

Case 1: Mrs. W. M., a well nourished white female, age 17, was delivered of a normal child on June 26, 1940 after having a hard and prolonged labor. A low grade puerperal sepsis followed and persisted in spite of adequate continuous sulfanilamide therapy. On July 6, 1940, ten days after delivery, the patient complained of acute pain and swelling of the left lower leg up to the popliteal region. There was definite tenderness over the vein in this region. In spite of local treatment and increase in the dosage of sulfanilamide, the tenderness and swelling had extended above the knee the next day—July 7, 1940. The left lumbar sympathetic ganglia were blocked with novocaine at this time. There was relief of pain within a few minutes. The following day, the tenderness and swelling were much better. Two days after the first injection slight tenderness and swelling persisted next to the heel. A second injection was done, and the condition promptly cleared up within the next four days. There has been no swelling or tenderness since that time and the circulation is normal in

every way. Temperature was not significant here as the sepsis persisted a few days longer.

Case 2: Mrs. I. K., a white female, age 66, whom I had already treated for a chronic heart condition, developed pain and swelling of the entire left lower extremity on March 12, 1941. I saw her on March 13, 1941 at which time there was pain, marked swelling of the lower leg and thigh, tenderness over the femoral vein, and temperature 101. Novocaine block of the left lumbar sympathetic ganglia was done. Sulfathiazole was also started, two grams the first dose and one gram every four hours thereafter. There was relief of pain a few minutes after injection. The following day the swelling and tenderness had left the lower leg. Temperature was 100.4. The second day, there was still some swelling and tenderness in the thigh with moderate pain. A second injection was done. Temperature was the same. The condition continued to improve and the temperature returned to normal within five days. Slight tenderness persisted in the upper part of the thigh for a few days.

We have a treatment here that will no doubt eliminate to a great extent a most uncomfortable and disabling condition. To be most effective, the novocaine block must be done early in order to obtain a cure before permanent damage is done. It is a procedure that any physician should be able to perform since there is a minimal chance of doing any permanent damage to the structures involved.

It is interesting to note that although sulfanilamide was used in one case and sulfathiazole in the other, there seemed to be no permanent relief until the vasospasm was relieved. Whether this observation will continue to be the same in every case, I cannot say. However, one or more of these drugs as indicated should be used in every case in conjunction with the novocaine block since there is a definite infectious process present.

SUMMARY

1. Novocaine block is the treatment of choice in acute thrombophlebitis.

2. It is a simple procedure and needs no special training to perform it.

3. It should be done very early to avoid permanent damage.

4. The sulfonamides are helpful and definitely indicated, but the vasospasm must be relieved.

5. No physician should consider his treatment of acute thrombophlebitis complete without giving his patient the benefit of this most helpful procedure.

REFERENCE

"Treatment of Thrombophlebitis by Novocaine Block of Sympathetics", by Alton Ochsner, M. D. and Michael DeBakey, M. D., New Orleans. Surgery, April 5:491-496. C. V. Mosby Co., St. Louis.

Treatment For Paresis

A five year study of 232 patients with dementia paralytica, also known as paresis, a chronic syphilitic disease of the nervous system involving the brain, who were treated with either malaria or artificial fever leads Jack R. Ewalt, M.D., and Franklin G. Ebaugh, M.D., Denver, to conclude that artificial fever is the preferable treatment, they report in *The Journal of the American Medical Association* for May 31.

They point out that "There is nothing unique in the use of either malarial therapy or artificial fever, the former having been advocated by Wagner von Jauregg's original report in 1917 and the latter by C. A. Neymann and S. L. Osborne in 1929."

However, there has been some skepticism about the treatment value of the artificial fever method by which temporary elevations of a patient's temperature may be induced by placing him in a cabinet for carefully controlled periods of time.

In the cases studied by Drs. Ewalt and Ebaugh, patients were assigned to the artificial fever or malaria series in alternation as they were admitted to the Colorado Psychopathic Hospital and Clinic. The follow-up treatment in both groups was as nearly identical as possible.

"The method of treatment with artificial fever has been safer and has been productive of better results," the two physicians declare. "The importance of follow-up care is emphasized. Improvement in the care of patients during malaria treatment and more attention to follow-up medication has improved the results of malaria treatment in our clinic, although the results still remain inferior to the results obtained with artificial fever treatment."

WIZARD HANDS*

(A Tribute to Francis T. Stewart, M. D.)

By FREDERICK E. KELLER, M. D., F. A. C. S.
Philadelphia, Pennsylvania

In the glamour and dramatic introduction to surgery which comes to every medical student, I saw the skillful hands of Francis T. Stewart at work and felt they were the most dexterous hands I had ever seen; that they were technically perfect. In the light of many years' observation and more experienced reasoning I still believe this to be true.

It did not seem the lot of this master of technique to be well known personally for he did not draw men to himself but was reserved and quiet, retiring and seemed preoccupied or in deep study. His eye was rather cold and in its depth his thought was veiled. His lectures were monotonous but scientific; his book an epitome, for did one's attention lapse a single word, a paragraph or a page must be reread. His humor was dry and sarcastic with often very cleverly hidden meanings. Others as well as the writer were the recipients of his thrusts. It seems necessary to study this side of the man in order to contrast his highly developed skill; a few illustrations might be noteworthy.

That remarkable hero of a perverse fate, James W. Keath, was responsible for the following revelation: Quite a time after Keath's original injury which caused his paralysis and necessitated the amputation of both legs, Professor Stewart was dressing the stump of one and removing the sutures. The resident in attendance persisted in asking numerous questions rather than observing. The questions remained unanswered in this preoccupied mind. When the resident said: "You do not object to my asking questions, do you?" Dr. Stewart replied: "Not if they are sensible", and continued to remove sutures.

*Read before the University Convocation, West Virginia University, Morgantown, West Virginia, March 28, 1941.

THE AUTHOR

Dr. Keller, graduated Jefferson Medical College; interned Jefferson Hospital; Chief Resident, Frankford Hospital, Philadelphia; Associate Medical Director, Anderson Hospital, Philadelphia; Fellow American College of Surgeons; Member Poetry Society of London.

It is my misfortune to be left-handed. During an operation, upon which as a resident, I assisted Stewart, he objected to my cutting sutures with the scissors in my left hand and on two occasions I was told they were right-handed scissors. After the third lapse, this surgeon engaged the anesthetist in conversation as follows: "Smith, do you remember Buckner who was here a few years ago?" "Yes", answered Dr. Smith. "I had a letter from him today", continued Stewart, "and he is doing nicely. Buckner was a nice fellow. We had good residents in those days; look at this left-handed thing I drew." The sting of this episode was hidden under the realization that in using the scissors left-handed it threw my hand against his field of vision and broke a point in the symmetry of his work. On another occasion when performing a diverticulectomy on the esophagus after the incision and exposure, he set the retractors and said: "Hold the retractors just that way and don't tell me you are tired after an hour or so."

During the last war it was my duty to accompany a sick officer from Texas to New York and on the return trip I took the occasion to stop into Jefferson and to my great delight Stewart was preparing to operate. My friend Jones was then resident. Stewart seemed glad to see me and I recounted what he had said about me as a resident. In the quietness with which this was received I felt

rather ill at ease. In a few moments Stewart cleared his throat in his characteristic manner and said: "Yes, I remember what I said and the occasion. It is peculiar how you will remember such things and not what we try to teach you. Yes, I said it and it was true, the residents were poor then and have been getting worse ever since."

HUMOR

By the time the class of 1917, Jefferson Medical College, had reached its senior year the clinic of Professor Chevalier Jackson was running along in full stride with its genius and drama. The majority of a ward class cut Dr. Stewart's operation to witness a bronchoscopy and appeared late. Professor Stewart who was performing a bilateral gland dissection of the neck as a preliminary to glossectomy for cancer, said: "Where have you all been?" "We were watching Dr. Jackson" was the answer. "And what did he do?" "Removed a quarter from the bronchus." "Well", was Stewart's comment, "I wouldn't operate on anyone for less than fifty cents." A few minutes later Professor DaCosta came into the operating room and looking over the anesthetist's shoulder at this perfect gland dissection said: "Dr. Stewart that is a marvelous dissection." Stewart surveyed his work and said: "It could be neater."

There was also an uncanny ability in this man to evade a direct answer or to size up a situation as these two incidents show: On the occasion of an operation about to be undertaken for removal of a kidney stone the patient said: "Dr. Stewart, I am so afraid something will happen." "What could happen", asked Stewart? "Oh, I am so glad you feel that way", was her answer. And she underwent her operation much relieved.

This surgeon also had a habit of visiting each postoperative case before he left the hospital. Once when the son of a very religious family was coming out of the effects of the ether, the professor's advent to the room was met with a string of profanity. The parents were amazed. It was up to the doctor to say something and he did. "We see this often", he said, "when a drunk or some dissolute character is coming out of the effects of ether they invariably pray, while one who has had careful rearing always swears." The people were satisfied.

A rather singular episode occurred in the dressing room under the "old pit" between DaCosta's and Stewart's operating time. DaCosta's undershirt was lost and considerable acrimony and profanity were indulged in by those present, all of whom will remember the occasion. Stewart was mildly interested but made no comment. Later in operating, suture after suture broke in tying and the nurse was told repeatedly to try the sutures before handing them over. Finally after the fourth break Dr. Stewart said: "Don't give me any more of this catgut; save it for Dr. DaCosta; he will know what to say."

After timing his operating work as a student will do and finding Dr. Stewart with a minimum of effort, instruments, one assistant and no flourish could do hernia with an extra reduplicating layer of the fascia of the external oblique and complete the job in twelve minutes; that a varicocele took three minutes; that a hysterectomy and cholecystectomy on the same patient, with separate lower and upper abdominal preparations and change of gowns and gloves between operations took only thirty-five minutes, I determined to observe closely and analyze the man's work and hands.

CLEANLINESS

Dr. Stewart was well fitted for a surgeon for he thought and lived in terms of surgery and asepsis. He would not allow anyone to hold his coat nor touch his coat collar; if his nose itched he rubbed it with the back of his wrist and never scratched; he wore a glove when opening a door or getting on a trolley car or hanging on a strap; he wore cotton gloves over his kid gloves when driving his own car. His personal habits were remarkable cleanly. When he came into the hospital he washed his hands after hanging up his coat and hat. In the operating dressing rooms he washed hands, face, and glasses in alcohol

before donning his operating suit preparatory to scrubbing for the operations. His care, thought, personal habits, preparation of himself I observed as a resident, and they were so meticulous that he could have operated on me as he came in off the street.

He used one assistant with the remark in his manual that one was enough and the more hands, the greater the risk of infection. His brevity is well illustrated also in the mentioning of microcephalus recording that linear craniotomy was useless and would not be described. No words are wasted in the section in his handbook regarding arterial operations; e. g., the abdominal aorta has been tied fifteen times with fifteen deaths, although one lived ten days, one thirty-nine, and one forty-eight days. He did not even mention that one of those who lived was his own case and that he had diagnosed and removed a thrombus from the abdominal aorta while it was compressed between the thumbs of his assistant; that circulation was reestablished in the lower extremities and the patient died of pneumonia. Further in recounting his own work on the blood vessels, these sensational facts are dismissed with three lines: "The author has successfully sutured the axillary artery in three instances, the radial in one, the femoral in three and the popliteal in one, four of these being end to end anastomoses." Likewise in injuries of the heart one and three-quarter lines cover this astounding fact:

"We have sutured the heart in five cases with three recoveries and have notes of one hundred and ninety cases with seventy-six recoveries." Please note Stewart's percentage of recoveries was 60 per cent against 40 per cent in other reported cases, which I believe to be the highest percentage of recoveries of any one man who had operated on four or more heart injuries (1911).

AMPUTATION OF THE BREAST

The operation for which he will always be remembered was his amputation of the breast. It is covered in six lines: "The author prefers a long elliptical incision extending from the insertion of the pectoralis major to the ensiform cartilage, because the apex of the triangular flap described in the Halstead procedure is very apt to slough, and because it is often desirable to remove the fascia over the upper part of the rectus abdominis."

Quite a series of cases of spinal injuries and operations of the same were amassed by Dr. Stewart, who considered them on the basis of principles which governed injuries to the skull. In his book one finds this statement: "The author's views, which are not those generally adopted are." Therein he does not even mention the celebrated case in which he sutured a severed spinal cord, with recovery of some sensation in the paralyzed extremities, and of which John B. Murphy said: "Such a thing is unheard of, but when it is reported by a clinician whose work and observation are as careful as Francis T. Stewart's, we must listen."

TECHNIQUE

But it is of the actual work and technique, I wish to speak. The careful preparation, the one assistant, the one nurse, all combined in creating an electrified atmosphere. One felt always he would see a master working in creating a masterpiece. The small square table used for instruments; the incredibly small array of instruments; the sponges tilted on edge along the rail; the black sheets (as we found later for the ease on the surgeon's eyes); the quiet ease of manner, all were so in harmony. Twelve instruments were sufficient for a hernia; fourteen for a hysterectomy, and an equivalent number for an appendectomy. Each instrument was placed in a certain place on the instrument table, which in turn was close to Professor Stewart and within easy reach of his hand. He knew the exact distance to reach for each instrument and knew its location. He never over or underreached; he never made a false or hurried move; the tissues were handled with respect; blood vessels were clamped immediately and he ligated as he went. A major operation would, therefore, often be carried on with a single package of sponges. It was the favorite query among the students at his

clinic: "Have you seen any blood, yet?" A diverticulum of the esophagus became a picture under his hand; a gastroenterostomy became a scientific symphony.

With a long series of continued successes, he wore his crown of achievement and duty with both dignity and modesty. The Chair of Clinical Surgery at Jefferson Medical College as far as I am able to ascertain, was created at the instance of Professor DaCosta as a recognition of Dr. Stewart's work, skill and ability, and he was the first to occupy it, a tribute by a great genius to one of his like.

His remarkable faculties were active to the end, for on Monday afternoon he operated at 4:00 p. m. The condition involved was a carbuncle on the upper lip on the son of a doctor. He made a small incision well up near the inner canthus, ligated and sectioned the lateral nasal vein before removing the carbuncle en masse. The boy went on to an uninterrupted recovery. Dr. Stewart went home following the operation, was taken with severe pain in the head and died some hours later of cerebral hemorrhage. Even the last operation he performed demonstrated the type of surgical foresight he exercised. He died on the surgical battlefield.

Francis T. Stewart was born in the Kensington section of Philadelphia, where his father was in the dyeing business. On the wagon which wandered around that section appeared this slogan: "We dye to live." This great man has adopted the paraphrased slogan of his father and has died to live forever, an immortal in American surgery.

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REPORT OF A POLIOMYELITIS EPIDEMIC IN WEST VIRGINIA PUBLIC HEALTH DISTRICT NO. 2

By HERBERT DUNCAN, M. D.
Lewisburg, West Virginia

THIS is a report of forty-one cases of poliomyelitis which occurred in the public health district composed of Greenbrier, Pocahontas and Monroe counties, during the latter part of 1940 and early 1941.

At this time there was a large epidemic of poliomyelitis raging over the entire southwestern part of the state. The first case appeared in Greenbrier county on August 23, 1940, in the western section and the first case in the eastern section was not reported until September 8, following.

I might say that Greenbrier county consists of two separate districts that resemble different counties. The western part is mainly industrial and there are many towns and coal camps which have arisen because of the industries. The eastern section is devoted almost entirely to agriculture and the tourist trade.

THE AUTHOR

Dr. Duncan, graduate University of Louisville; interned St. Anthony's Hospital, Louisville; Director Public Health District Number Two; American Public Health Association; President, Greenbrier Valley Medical Society.

While the director saw all of the cases, his position was as consultant and for diagnosis, and he did not treat any of them. However, he did recommend orthopedic care when it was indicated.

Although the number of cases was not so large, the case rate for the county was much higher than it had ever been in the past.

With the smaller number of cases, it was possible for the director and nurses to visit each patient and take more detailed histories than would have been the case if the number had been much larger.

While statistics are usually boring, some of the results of this epidemic are quite interesting.

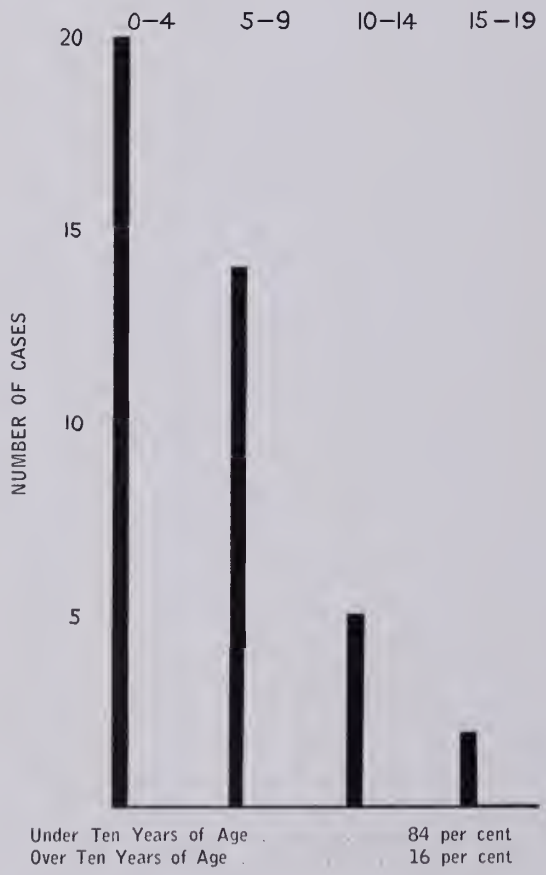
The case rate for Greenbrier county was 66.8 per 100,000 population; for Pocahontas county 45 per 100,000, and for Monroe county 25 per 100,000. The death rate for the district was 146.4 per 1,000 cases, or approximately 15 per cent fatality. This death rate is higher than average.

I have divided the cases, as to age, sex and counties.

Of the forty-one cases, 34 or 84 per cent were children under ten years of age, and seven or 16 per cent over ten years of age. There were only two cases fifteen years or older, with one case, nineteen years, being the oldest. The youngest case was eight and one-half months.

These figures are shown in Table I.

TABLE I. DISTRIBUTION BY AGE GROUPS



In relation to the sex of the patients, males were attacked almost twice as frequently as females; 63.4 per cent of the cases being males and 36.6 per cent females, as is shown in Table II.

TABLE II. DISTRIBUTION BY SEX

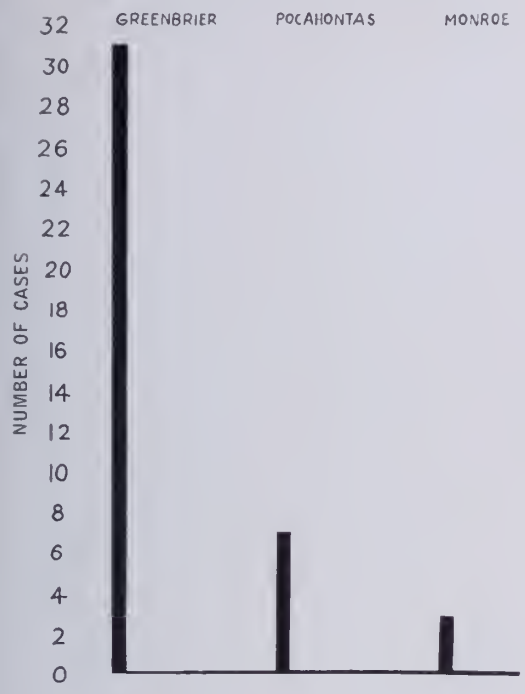
All of the deaths occurred in the males. Also, the disease as a whole was more severe in the males than the females. I have no explanation for this fact.

Greenbrier county has approximately 35,000 population; Pocahontas county has 15,000 and Monroe has 12,000.

Greenbrier county, as would be expected, had the largest number of cases—31. Pocahontas county had seven cases and Monroe county had three. These are shown in Table III.

One of the interesting phases of this epidemic was the difference in severity of the cases between those in the western and eastern sections of Greenbrier county. Of thirteen cases in the west, there was only one death and eight cases of paralysis. In only a

TABLE III. DISTRIBUTION BY COUNTIES



very few of the cases was the paralysis severe. This gives a rate of 61 per cent of patients who had any paralysis. In the majority of the cases in western Greenbrier county, the paralysis and weakness did not appear until the children had recovered from the acute stage of the illness and had begun to go about their usual life. Then several of the cases developed limps or weakness in the back and abdominal muscles.

On the other hand, of eighteen cases in the eastern section of the county, sixteen or 88 per cent had paralysis and there were three deaths. Also, the children developed paralysis either at the onset or shortly thereafter. The paralysis was quite severe, in that the limbs or muscles would completely lose their function. The deaths were caused by respiratory paralysis.

The point that may have influenced the outcome of the cases in the two sections of the county is that in the western section, practically all the people live in towns or coal camps. Because this would probably throw the children in contact with undiagnosed and subclinical cases of poliomyelitis, their immunity against this disease would undoubtedly be increased.

In contrast to this point is the fact that in the eastern section, the majority of the population live on farms outside of the incorporated limits of the towns. Therefore, due to the fact that the children have had a minimum amount of exposure to the disease, their immunity would be low.

I believe that this finding is common to most epidemics of poliomyelitis and the case rate is consistently higher in rural than urban populations.

One other noteworthy point is the fact that there were no cases among the Negro population.

The epidemiological work on this disease is seldom very enlightening and this epidemic proved no exception. However, in fourteen cases, or 34 per cent, there was a definite history of contact or previous illness in the family.

I believe that if one goes into detail in the history, in most cases it is possible to find that someone in the family has had some illness before the patient developed poliomyelitis. Possibly many of these cases of minor illnesses were mild cases of poliomyelitis.

Since the only test of any value that we have available in poliomyelitis is the injection of suspensions of fecal matter or nasal discharges from the patient into Rhesus monkeys, who will develop the disease, little work can be done in tracing the source of infection.

It will probably be proven in the future that there are healthy carriers of poliomyelitis virus just as in many other diseases.

SUMMARY

The summary of the outcome of the cases is as follows:

Complete recovery	6
Slight paralysis	11
Severe paralysis	18
Deaths	6
	41

POPULATION TRENDS WITH SPECIAL REFERENCE TO WEST VIRGINIA*

By S. L. GALPIN
Morgantown, West Virginia

POPULATION trends are changing rapidly and in some instances critically whether considered at state, national, continental, or world levels. The world's outstanding population trend throughout the past three hundred years has been one of accelerating increase which began with the colonization of the western hemisphere. Only recently, probably within the past twenty years, the accelerating increase has changed to a decelerating increase. This does not mean that world population has ceased to grow but indicates only that the per cent rate of increase is slowing down. The numerical increase (estimated around 200,000,000) of the past decade is the greatest of record, yet this probably does not represent the peak which may be expected within a few decades. Rates of growth have been far from uniform in different parts of the world or in any particular part over a long time period. At present, rates of population growth are said to be falling in all continents except Asia.

In the United States growth rates prior to 1860 averaged close to thirty-five per cent per decade, or five times that of the past ten years. Probably no other nation has ever equalled this per cent increase. From 1860 to 1890 the increase held near twenty-six per cent per decade; from 1890 to 1910, about twenty-one; from 1910 to 1930 about fifteen, and for the past decade, six and nine-tenths. About 1930 the rate of growth in the United States fell below the world rate. Numerical increases did not reach their peak until the decade ending in 1910 when the ten year increase was 16,138,000. In the decade just passed the increase had dropped to 8,500,000.

*Read before the West Virginia State Health Conference, Morgantown, West Virginia, October 31, 1940.

THE AUTHOR

Mr. Galpin, Western Reserve, and Cornell University; Instructor Cornell University, 1907-1912; Professor Iowa State College, 1914-1927; West Virginia University, 1927-1933. Consultant to West Virginia State Planning Board, 1934-1937.

West Virginia inherited at birth a population of about 400,000 which, in the approximately eighty years of her existence, has been increased nearly fivefold. Present trends and tendencies indicate that future population growth will be at a much lower rate with the definite possibility of no growth after twenty to forty years.

The state's population reached a maximum rate of growth of 39.9 per cent per decade between 1870 and 1880. Succeeding decades show increases of 23.3, 25.7, 27.4, 19.9, 18.1 and 9.9 per cent, compared to 25.5, 20.7, 21.0, 15.4, 15.7, and 6.9 per cent for the United States. Except for the 1880-1890 decade, West Virginia's growth rate has been higher than that for the United States. Actual or numerical increase for the state reached the decennial maximum of 265,504 with the decade ending in 1930, fifty years after the per cent increase had passed its peak. While the decade just passed produced population increases of 8,500,000 for the United States and 171,012 for West Virginia, these are between a third and one-half less than the maximum for each. If the 1930-1940 trend continues without change the populations of both the United States and of West Virginia will have ceased to grow by 1960.

The amount and direction (trends) of population change are determined by the independently variable factors of births, deaths, and migrations.

Birth rates (the crude rate is the number of live births per 1,000 population) declined slowly in the United States from about 1860 to 1920. After 1920 the decline was rapid until 1934 in which year there was a slight increase followed to date by a gradual decline. West Virginia has maintained a consistently higher birth rate, but with fluctuations similar, both in time and amount, to those of the nation. The present crude rate is about 22 and is equal to the national birth rate of fifteen years ago. The present national rate is about 16. Despite the recent leveling of the birth rate, it seems probable that there will soon be a resumption of the decline which was halted in 1934. Economic pressure and insecurity are commonly and correctly blamed for decreased birth rates but there are other equally important factors. The higher a family stands in the strata of society, the smaller it is likely to be. The more schooling parents have, especially beyond the eighth grade, the fewer are their offspring. Urban populations, notably those of the larger cities, fail by as much as 25 per cent in maintaining their numbers by natural increase. In rural districts the normal backlog of all populations, modernization of farming and horizons expanded by good roads, radio and centralized schools, are powerful factors in reducing birth rates. Only in the lowest income groups have these decelerating influences been ineffective. The burden of maintaining our population is being shifted gradually but certainly on to those economically least able to bear it.

DEATH RATES

Decreasing death rates have compensated for a part of the reduction in births. The present crude rate of about 10 per 1,000 per year is slightly below the national figure. While considerable reduction of infant mortality, now accounting for 1.5 deaths per 1,000 population, is expected, the gradual increase in median age of the population, increased economic competition, and less manual labor will probably hold the rate to its present level and eventually raise it.

The annual net natural increase in West Virginia is now about 12.5 per 1,000, or numerically 24,000. The drop in this increase in the past twenty years has averaged somewhat more than four per thousand per decade, showing that a continuation of this trend would result in no gain in about thirty years. It was stated above that the actual trend of population if continued without change would result in no gain within twenty years. The apparent discrepancy is due to migration.

Prior to about 1915 West Virginia gained by population movements but since that time the net flow has been away from the state at a rate of 5,000 per year before 1930 and of about 5,300 per year since. Migration exchanges have resulted in a loss of white population somewhat greater than indicated above as there has been a migration gain in Negroes of nearly one thousand per year.

INTRASTATE MIGRATIONS

A pronounced trend of the past twenty years has been the increasing mobility of populations promoted by improved and expanded facilities of transportation and communication. This results in quick concentration of population wherever jobs are available, and scattering a little less rapidly from areas of labor surplus. Mine, sawmill, and oil field developments will continue to induce local "ups and downs" in population. High living costs in cities, improved highways and swift but cheap transportation have encouraged a general and large increase in unorganized suburban and rural residence development. While this trend, which definitely is not a movement from city to farm, is likely to continue, it cannot overshadow for long the more fundamental farm to city trend because in both state and nation the farm population has a birth rate considerably above the requirements of replacement. In West Virginia this excess is about 8,000 annually. Prior to 1930 the surplus found occupation in other industries, but since that date has remained to a large extent on farms. Improvement in the condition of manufactur-

ing and business enterprises and the draft of young men for national defense will probably reduce this accumulated excess in farm population rapidly and rather completely.

The proportions of urban, rural non-farm, and rural farm populations have been and are distinctly different in West Virginia from those in the whole nation. Our urban population made up 28.4 per cent of the state's total in 1930 as against 56.2 for the United States; our small town and rural resident population had 45.7 compared with 19.3 per cent for the nation, and the farm populations constituted 25.9 and 24.5 per cent respectively. Data for 1940 are not available but it seems probable that for the first time the per cent of urban population will show a decrease from the preceding census, while both farm and rural non-farm per cents increase. As indicated in a preceding paragraph, this temporary trend will be reversed soon through improvement in economic conditions. The long-time trends are toward increased urban and suburban population and nearly stationary farm populations.

Preliminary figures for West Virginia from the 1940 census show actual loss in population in seven counties, gains but less than the net natural increase in 36 counties, gains approximately equal to the natural increase in three counties, and gains above the net natural increase in nine counties. Twelve cities of 10,000 population or more in 1940 gave an aggregate increase of 21,000 over 1930. Only three show gains above the natural increase and three had actual losses. The percentage gain was 5.1 for these twelve cities which is notably less than the 9.9 per cent gain recorded for the state.

AGE DISTRIBUTION

Changing birth rates and migrations have caused and will continue to cause marked changes in age distribution of the population. In 1930 the median age for West Virginia was 22.1 years, for the nation 26.4. The trend in both cases is upward toward a probable median age of about 32. For the next decade there will be a decided increase in the number of persons 20 to 60 years old, a moderate increase for those over 60, but a decrease of those under 20 years. The following decade the increases, both per cent and numerical, will be in the "over 60" age group which will have about twice the present numbers; the 20 to 60 year group will have about the same number as in the previous decade, and those under 20 will probably be considerably reduced in numbers.

The past twenty years have brought far-reaching occupational changes. Of these, none has been so disturbing as the mechanization of many kinds of industry. There has been also a gradual increase in the proportion of professional, technical, clerical and trades employment. It appears probable that these trends may continue to the point where from one-half to two-thirds of all persons gainfully employed will have work involving little or no muscular effort.

CONCLUSION

This is a time of change, both in state and nation, from a youthful fast-growing population toward a more mature people, stationary as to numbers. Neither limitations of natural resources or biologic incapacity forced this change. It stems from man-made social and economic modes. It is creating important problems in general economy, education, recreation and health which we hope and trust the increasing wisdom of a maturing population will happily solve.

Pneumonia Is Contagious

Additional evidence that pneumonia is a contagious disease and that all patients with it should be strictly isolated, even during convalescence, is presented in *The Journal of the American Medical Association* for June 7 by Sydney S. Gellis, M.D., and A. Graeme Mitchell, M.D., Cincinnati.

"Nine instances of cross infection with type I pneumococcus occurred in November and December of 1939 during a period of two weeks in the pediatric (diseases of children) service of the Cincinnati General Hospital," the two physicians say. "All the children, with one exception, were between the ages of two and three years."

PERINEAL REPAIR WITH COTTON AND POSTOPERATIVE SITZ BATHS

By A. P. HUDGINS, M. D.
Charleston, West Virginia

FACED with the problem of a grossly contaminated perineal field, cotton sutures for repair followed by sitz baths were tried. These cases had come to the hospital after precipitate labors or other complications. In every case the field was grossly contaminated, yet the results were so satisfactory in spite of the adverse circumstances, that the method was recently adopted as routine in perineal repair, both postpartum and postoperative, in a series of deliveries and perineorrhaphies.

The various methods of episiotomies and perineorrhaphies and the anatomy need not be discussed in detail here. The general principal of non-absorbable sutures, so placed that they can be removed and followed by daily sitz baths in strong sodium chloride solution, may be modified to meet the method found adapted to the individual operator. One method will be described with the results obtained.

The method used in this series of sixty-five cases, summarized in brief, is: After the episiotomy, or in the perineorrhaphy after the dissection, the vaginal mucosa is approximated by a submucous suture, continuous or interrupted, with ends left long to facilitate removal. Three interrupted, deep sutures through the muscle layer are tied for loose approximation and the ends left about two or three inches long. Another line of sutures is used for the fascia and subcutaneous sutures are used to approximate the skin, the ends being left long. These are all brought out, tied in a "horse's tail" and placed up in the vagina.

Single, number twelve or number twenty, white O.N.T. cotton (sterilized by boiling or autoclave) was found satisfactory. The sutures were removed two to four weeks after the repair.

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The sitz baths are started the following day after delivery, or the third or fourth day on postoperative cases when the abdomen has been entered. When the perineorrhaphy was done some time after the laparotomy the patient was given a sitz bath the following day if tolerated.

The sitz bath consists, ideally, of movable, chair-tub which may be brought into the patient's room with water at tolerance heat, adding hot water when it can be borne. To this is added coarse salt (barrel salt, or ice cream salt), four or five cups full to two gallons or more of water. The patient may get this treatment for twenty or thirty minutes once or twice a day. If there are signs of weakness or faintness during the first treatment, this may have to be slightly modified. If the special chair-tub is not available, the patient may be wheeled to the bath tub and treatment taken there. After the first or second bath the patients are willing and anxious to continue the treatment because of the relief and comfort afforded.

Patients who have had previous deliveries with repairs volunteered the information that this method is much less painful than the dry treatment. The nurses (who expect much more complaint because of perineal wounds than from abdominal wounds) are surprised on observing how comfortable these patients are under this routine.

The theory of the sitz bath is to place the patient in a hot, hypertonic saline solution

which, by osmotic action as well as the simple cleansing effect, gets the serum and old blood clots out of the wound. Also, early rising (erect posture) allows the vagina and uterus to empty, easily, any clots. Whatever the theory or the modus operandi, the fact remains that the perineal wound is clean with practically no evidence of edema, a minimum of pain, and healing takes place rapidly.

OBJECTIONS

Theoretically, there are many objections to this method; objections which were considered and investigated. First, the possibility of infecting the wound by bathing the fresh wound and the rectum in the same solution. However, the wounds did not become infected (perhaps due to the concentration of the salt solution). The temperatures in this trial group showed less elevation than in the control group. The second objection to be considered is the possibility of extension of infection up into the pelvis. This did not occur. The water in the sitz baths was only about two inches deep; not high enough to carry infection up into the pelvic structures. In only one case (in the series of over 65) did an infection occur and this was in a case that was known to have had a Bartholin gland infection during the latter part of pregnancy. The third objection—possible disruptions of the wound. The final healing was more satisfactory in this group than in the control group when the factors were comparable. Fourth—the possibility of pelvic displacements or poor support due to early rising. Examinations did not bear this out. There were no more displacements or ptosis in this group than in the control group. As a matter of fact, several papers have recently appeared stating the advantages of getting the patient out of bed early after surgery.

These above-mentioned possible complications did not occur. The wounds healed well; the patients were markedly more comfortable and the temperatures returned to normal much more quickly (or remained normal) throughout. Especially was this noticeable in the potentially infected or unsatisfactory case.

A few points about the sutures may be of interest and help: At first, all the sutures were put in by the subcutaneous and submucous method and the ends cut short. These sutures were buried and were to stay in. In a few instances these sutures "worked out" or were painful and required removal. This presented no difficulty or complication except that it was a potential variable factor which was later avoided when all the sutures were routinely removed. Also, in one case the perineum was painful, the suspected suture could not be easily removed and required an anesthetic for removal and correction. These difficulties have been overcome by the method of leaving all sutures long in order to make certain that all are removed.

It is, apparently, advantageous to leave the sutures in for at least two weeks. They have been left in for five to six weeks with no harmful results noted. There is a mental hazard at first when one considers removal of the deep (muscle) sutures. This is not difficult. With slight traction on the long end the loop at the knot presents itself at the skin edge and is easily clipped with the regular suture scissors. The long ends, protruding through the skin from the deeper structures, have a definite advantage in allowing the serum and blood to escape and in permitting the hypertonic salt solution to get up in the wound, thereby releasing any possible fluid or serum accumulation.

EFFECT ON THE SKIN

The inconvenience caused by the necessity of removing perineal sutures in contrast to the method in common usage (when absorbable sutures are used) is more than compensated when one considers the other advantages of this method.

In this series of cases the sitz baths in hypertonic salt solution caused the skin on the thighs to be slightly dry and scaly. This did not require any treatment, though simple ointments or oil may be used if necessary. The coarse salt was found to work better than regular table salt because the more pure form of sodium chloride was found to cause less

irritation than the salt which contained other chemicals (magnesium carbonate in a few cases) to make it "flow" easily.

SUMMARY

Perineal repairs (obstetrical or surgical) are satisfactorily carried out by use of cotton sutures followed by hypertonic sodium chloride sitz baths.

The advantages are—more satisfactory healing of the wound, less postoperative pain.

It has been found advantageous to leave the sutures long to facilitate their removal.

STERILITY STUDIES IN WOMEN*

By EDWIN J. HUMPHREY, M. D.
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In the past few years an increasingly large number of patients have consulted our clinic group because of inability to become pregnant or to carry the product of conception to a successful conclusion. This desire of married couples for children, to some extent at least, explains the increased interest and research of the members of the profession.

Because of the time consuming care and minute attention to detail which are necessary for the proper study of a case of sterility, this important problem is all too frequently subjected to the good old hit or miss method of treatment with little more than a history being relied upon to explain the etiology and direct its therapy.

This paper is an attempt to follow through a regular outline in the study of this condition and to simplify the various examinations and tests involved to arrive at a correct diagnosis.

Tradition has given the obstetrician and gynecologist the problem of sterility. Only in recent years has there been a study of the male included in the investigation. Various authors report from thirty to fifty per cent as the percentage in which the male is at fault. Naturally a complete study cannot be carried on without the cooperation of both the husband and the wife, and if this is not obtainable the case should be refused.

The first necessary procedure is the taking of a searching history. Specific questions should be asked of the husband concerning orchitis or epididymitis from gonorrhea, tuberculosis, mumps or scarlet fever. Injury to the testicles, hydrocele, hernia, undescended or late descended testicle and operations on or about the spermatic cord should be carefully inquired into. A tender prostate gland demands further investigation. Previous marriages and whether or not they were childless may be a helpful clue. Anything suggestive of some endocrine disturbance should demand further investigation. The occupation, weight changes and particularly underweight, or any general poor health may be important.

A similar line of questioning should be followed in the study of the wife. Family history should include the fertility and menstrual characteristics of the patient's mother and sisters. The past history should give special attention to previous operations, mumps and symptoms at any time which could be associated with any degree of pelvic inflammatory or venereal disease. The menstrual history should include age at onset, regularity, any changes in regularity, number of days menstruating, cramps before or during the menses, ovulation time and vaginal discharge.

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*Read before the West Virginia Obstetrical and Gynecological Society, Charleston, West Virginia, May 14, 1941.

The marital history should include age of marriage, ages of children, miscarriages, and any complications of delivery, currettement, or postpartum course. Also how long any contraceptive device has been used and what type.

The endocrine history should be most thorough. There is usually much overlapping of symptoms but the physician should try as far as is possible to classify the symptoms in order to group them under the primary gland deficiency. The following outline of symptoms is generally accepted in the light of our present day knowledge of the endocrine system:

Ovarian—regularity of menses, amenorrhea, dysmenorrhea, metrorrhagia, headache and climacteric symptoms.

Thyroid—exophthalmus, tremor, thyroid enlargement, palpitation, loss of weight, slightly elevated or abnormal temperature, periods of depression, constipation, sleepiness, lassitude, dry skin, dry scalp, gain in weight, especially if characterized in the beginning by the appearance of the so-called fat pads on the hips, prematurely grey, brittle hair which falls out easily, excessive growth of hair on the body, nails brittle and striated, loss of sexual desire and cold extremities.

Pituitary—gain of weight, increase or decrease of sexual desire, changes in the menses, sleepiness, headaches and visual disturbances.

Adrenals—general asthenia, loss of weight, excessive pigmentation of the skin.

EXAMINATION

A complete general examination must be made of both partners. Since we are concerned in this paper with a study of the female, only the detailed examination of this partner will be gone into. A careful investigation of all the general systems must be made in order to rule out the general causes of sterility and to assure ourselves that the patient in question is physically able to undertake pregnancy and childbearing in case we are able to remove the obstacle to her conception. All foci of infection must be searched out and eradicated. The special points to be noted in the vaginal examination are—size of the vulval opening, adhesions about clitoris, distribution of hair, type of vaginal and cervical discharge, position, size and condition of the cervix, size of the external os, and the presence or absence of cervical plug of mucus. The position, size, shape, consistency, tenderness, mobility and attachments of the fundus should be carefully palpated and the usual examination made of the adnexa for adhesions and masses.

Routine blood Wassermann tests, urinalyses and complete blood counts are made.

Because the male factor is responsible for the etiology of the sterile union in such a large number of cases, it is the first investigation to be carried out.

For the condom specimen examination and the urological investigation of the male, the aid and experience of a competent urologist should be enlisted. We should call attention to the fact, however, that the specimen should be immediately transferred from the condom and taken to the physician's office in a glass bottle. In many cases it has been found that the contact with the rubber has a negative influence on normal spermatozoa. Many recent advances in the study of the morphology of spermatozoa have been made, particularly the work of Moench. He has described a very simple and accurate method of staining, counting and classifying the cell heads and has called attention to the fact that prognosis is more dependent on the morphology of the sperm heads than on their activity. He states that abnormal tails are not found to be of great consequence. When an abnormal male factor has been found, the urologist who has given special attention to this type of work should be responsible for his treatment.

When the male factor has been eliminated, we may then begin the study and attempt at correction of all the potential factors in the female. In the study of each individual case, it is well to keep in mind that several deviations from the normal will usually be found, none of which by itself may be a specific cause but in combination are usually responsible.

In the absence of any gross lesion of the female reproductive organs, the tubal patency test is next in order. This test must always be done with caution. The operator should be familiar with Rubin's contraindications to its use. Chief of these contraindications to be borne in mind constantly is a history of some recent tubal infection in at least the last two years. The optimum time for this examination is about ten days after the beginning of the last menstrual period. This time is selected as just preceding the time of ovulation and it is considered possible that occasionally friable adhesions and obstructions to the lumen of the tube may be broken up enough by the air insufflation to permit passage of the ovum through the lumen of the tube. Pregnancy will occasionally follow the use of this test where the union had been sterile for some several years previously. It is not necessary to have a complicated apparatus to determine whether the tubes are patent. A uterine cannula with an adjustable rubber acorn tip, a spring or mercury manometer, rubber air bulb, rubber tubing and a stethoscope are all that is required. The reading in millimeters of mercury should never be forced over two hundred to two hundred and ten. Nearly always, if the tubes are patent, the reading goes up to one hundred to one hundred and ten millimeters and then drops suddenly to forty or fifty millimeters. If a stethoscope is placed over either lower quadrant it is possible to hear the air swish through the tube. If the tubes are found blocked, it will then be necessary to have the more complicated Rubin gas apparatus with the kymanometer to determine which portion of the tube is obstructed, et cetera. Personal preference, however, in case of blockage with the simple apparatus is to use injection of iodized oil and x-ray studies. Treatment measures for tubal blockage consist of repeated attempts to insufflate with the gas testing apparatus. The results in a series of cases would not be considered good from a statistical standpoint but an occasional gratifying result is obtained. In those cases where the blockage of the tube is in the outer half, plastic surgery may be indicated. It is well to explain to the patient before undertaking this type of surgery that the results have only one chance in five or more of being satisfactory.

HUHNER TEST

When the tubes are normally patent the postcoital or Huhner test may be of value. For this test the patient is directed to lie on her back for thirty minutes after intercourse and then come to the office immediately. Semen is then aspirated from the posterior fornix, from around the cervical plug and from the cervical canal after the mucus plug is removed. A different slide is made from each area. If active and normal spermatozoa are found in all three areas, which maintain their activity for two to three hours, the results would be considered normal. If they are found active in the posterior fornix and inactive or absent in the cervical canal, the secretion of the endocervix must be tested. If inactive in the posterior fornix the secretion of the vagina must be investigated.

Measures should be instituted to clear up chronic vaginal discharges of whatever cause. Since the mucus secretion of the cervical glands is of extreme importance in assisting or preventing the entry of the sperm, erosions and endocervitis must be corrected. Nothing more radical is usually required than the use of the actual cautery. In the more advanced stage we have a preference for the use of the conization technique with the cutting current. Some authors prefer the use of electrocoagulation by the Cherry electrode. A few authors prefer amputation of the cervix after the method of Sturmdorff. There are advantages and disadvantages of each method but in connection with our subject, we are concerned with removing the cervix as a barrier to conception and also with having a cervix as an end result, that will dilate and retract normally in the first stage of subsequent labor. The conization technique of Hyams, when not carried deeply into the muscular layer of the cervix, is the most satis-

factory method to preserve the normal cervix without scar tissue formation.

An apparently stenotic or pinhole os is usually not a barrier to spermatozoa. The occasional pregnancy following the simple procedure of cervical dilatation is, I believe, evidence that other pathology existed. Adhesions from a previous currettage may be obliterated. Often a plug of mucopurulent material is removed by the dilatation process. Careful examination will reveal an inflamed and bleeding endocervical mucous membrane.

Dilatation and currettage of the uterus is rarely necessary for the proper diagnostic study of these cases. This procedure should not be done routinely but only to investigate certain special conditions. It may result in occluded fallopian tubes where no blockage existed before.

BIOPSY STUDY

It is indicated to investigate certain polypoid conditions of the uterine and cervical endometrium, for the diagnosis of submucous or pedunculated fibroid, and in hyperplastic types of endometritis. When indicated it may also be used for a biopsy study of the endometrium for information in regard to the function of the ovary. Recent improvements in the technique of procuring these specimens for biopsy of the endometrium have made it unnecessary to do a dilatation and curettage. Several instruments are now available for obtaining these specimens for study by a simple, ordinary office procedure. The endometrium has been found to be a mirror of the hormonal functions of the ovaries and if only a single specimen is to be taken, the period two or three days before the expected menstrual flow will give the most help in determining the hormonal dysfunction.

Failure to find a normal secretory endometrial structure at this phase of the cycle suggests deficient corpus luteum secretion. This may be due to several causes. Many preparations are on the market for use as substitution therapy in this condition. Results are inconclusive at present with any of the various preparations and most investigators in this field report rather conflicting results. We have available the anterior pituitary-like products derived principally from pregnancy urine, placental extract, mare serum and amniotic fluid.

Estrogenic hormones are apparently beneficial in cases of hypoplasia of the genital system and may be given with good results either orally or by hypodermic or vaginal suppository.

All of these so-called endocrine patients should be given thyroid extract daily, the dose depending upon their basal metabolism reading and the clinical history and findings. They should also be given large doses of cod liver oil concentrates for their vitamin A content and wheat germ oil for vitamin E. Lack of both of these substances has been positively associated with impaired fertility and abnormal implantation of the fertilized ovum.

There are certain features to be emphasized in the correction of a hypoendocrinism in the study of sterility. These conditions have almost always existed since before the age of puberty and the time interval for correction is correspondingly long. This should be explained to the patient in order to secure her cooperation. Several months and sometimes years are required before the glandular threshold of a genital hypoplasia builds up to the level required for conception. This factor also holds true for the male. Another factor for emphasis in glandular therapy is the continuance of the remedy, or remedies, after conception has taken place. A large percentage of these women will miscarry, usually associated with previous death of the fetus in utero, if the therapy is discontinued after the pregnancy has started.

UNNECESSARY OPERATIONS

Of all the unnecessary operations to which these patients are subjected, those for the correction of a retroversion of the uterus are probably the most common. It is true that a great many patients with relaxed ligamentous support of the uterus and retroversion do not get pregnant, but it is usually because of some

other pelvic condition associated with, or causing the retroversion that is a responsible factor, and not the retroversion per se. It is our belief that a retroverted uterus, when there is no other pathologic condition of the pelvis, is almost never a barrier to fertility. The argument that the sperm will have difficulty getting into a cervix which points anteriorly is very questionable, but if valid the condition could be easily taken care of by instructing these patients to lie on their abdomen for one hour after intercourse. Pessaries are helpful in those cases with a posterior misplacement of the uterus when no other pathology exists except the passive hyperemia of the pelvic structures associated with the torsion of the blood supply from the misplacement.

PREVENTIVE MEASURES

A discussion of sterility is not complete without a word about its prevention. The time for this part of the work is before and during the age of puberty. Boys should be given full information about sexual relationship and venereal disease. Girls should be instructed in sex hygiene. During the puberty age girls should not be overburdened with music lessons, art work or other activity taking all hours indoors. They should not do violent exercise or excessive physical competition. They should be taught the importance of rest, relaxation and recreation.

If a girl has not begun to menstruate by the time she reaches her fifteenth year, she should have a complete physical examination, including blood count, basal metabolism reading, endocrine study and rectal examination. Sometimes abnormalities are found, which, when corrected, may lead to a normal menstrual and reproductive life. If neglected, permanent harm may result.

Unfortunately the size of this subject has made possible only a brief outline of this important problem which effects some four million of the population of the United States. At the conclusion of any sterility study I think it unwise to give an opinion of hopeless sterility to any of these individuals regardless of the cause found. There are the possibilities of mistakes and domestic difficulties between couples unable to adopt themselves to the situation. There are too many psychoneurotic reactions connected with the instinct for reproduction.

It must be remembered that tremendous strides are being made in the diagnosis and correction of the problems of sterility. It is possible that advances may be made in the near future to help those unfortunate victims of this condition, who at the present time may be considered hopeless.

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Immunity to Poison Ivy

"A widespread fallacy is that some people are immune to Rhus toxicodendron (poison ivy). Nobody is," Roger Kafka, New York, declares in the June issue of *Hygeia, The Health Magazine.* "After years of handling the vine unscathed, you may fall victim. * * *

"It is now known that the blistery irritation is an allergic sensitization. As with all allergies, some people are more sensitive than others and all people are more sensitive at one time than another."

Mr. Kafka points out that there is really no poison ivy season; that the stalk is dangerous even in winter when it is completely bare. When one does come in contact with poison ivy, he suggests that one lather the whole body with suds of any good soap, rinse and repeat. Soothing, protective lotions and hot compresses may give relief. The United States Public Health Service suggests that any one who must work where there is poison ivy smear all exposed skin surfaces with vanishing cream mixed with 10 per cent of sodium perborate. This cream must be freshly manufactured. The protection is good for four hours; it must then be washed off and a fresh application made if the exposure is to be continued.

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

Failure to find tubercle bacilli in the sputum, even after repeated examination of successive specimens, is no justification for ruling out the possibility of tuberculosis. Least certain of the several methods commonly used is the staining of the direct smear of the untreated sputum. One supplementary method is to examine the stomach washings for tubercle bacilli especially in the case of children who are likely to swallow the sputum. Roper and Ordway advocate its wider use for adults and offer impressive evidence of its value. Abstracts of their article follow:

Gastric Lavage in Adults

The examination of fasting gastric contents by smears for tubercle bacilli, first reported in 1898, proved unreliable and the need for culture and animal inoculation was demonstrated. Since 1927 numerous articles have been published regarding this procedure in juvenile tuberculous patients. More recently the test has been used on adults.

This report presents the findings obtained by guinea pig inoculations of fasting gastric contents of tuberculous and non-tuberculous patients. By the addition of this procedure to the usual methods, recovery of tubercle bacilli in tuberculous patients was practically doubled.

The studies were carried out at the Metropolitan Life Insurance Company Tuberculosis Sanatorium, during a three-year period in which approximately 1,000 patients were admitted, of whom 135 were diagnosed as having active pulmonary tuberculosis and the remainder were considered to be non-tuberculous. This afforded opportunity for using controls.

Since 1929 the percentage of minimal cases admitted has almost trebled; in patients with moderately advanced disease it has decreased slightly and in those with far advanced involvement it has declined to one-third the former figure. Yet, the percentage of positive sputum cases has fallen despite the more frequent usage of animal inoculation (from 45.2 per cent in the period 1926-1928 to 34.8 per cent in the period May, 1936 to May, 1939).

Of the 135 tuberculosis patients of the present study, 34.8 per cent gave positive recovery by sputum examinations alone. The addition of gastric lavage almost doubled this percentage, namely, 63 per cent. (Tables of the findings are described in detail).

Sharp distinction is made between sputum and fasting stomach contents. Sputum refers to that bronchial secretion which is actually expectorated by coughing or clearing the throat. The gastric specimen contains that bronchial secretion which has gained entrance into the pharynx and has subsequently been swallowed. Gastric lavage was initially employed in children because of their inability to expectorate. By means of this same test in adults, many positives are obtained among those whose efforts to raise sputum are unsuccessful, as well as in many of those producing unsatisfactory or negative sputum.

Sputum produced by the tuberculous patient may contain tubercle bacilli one day and none on the next. The same variability occurs with gastric washings. Stiehm recommends that the test be given on each of three successive mornings.

The test is of assistance not only in the diagnosis but also in the management of the tuberculous patient. After years of treatment the sputum may disappear or become negative, while the gastric contents still exhibit virulent tubercle bacilli.

The procedure of obtaining the gastric specimen causes only slight discomfort to most persons and is not harmful; on the other hand, repeated forceful voluntary efforts to expectorate are uncomfortable and may be harmful. The importance of proving or disproving the clinical and/or roentgenological diagnosis of pulmonary tuberculosis is obvious and of equal significance is the conclusive demonstration of the subsequent disappearance of tubercle bacilli from the bronchial secretions of tuberculous patients under treatment. Knowledge of these facts is of sufficient import to warrant and justify the use of gastric lavage whenever it is indicated by the absence or negativity of sputum.

Gastric Lavage in Adults With Pulmonary Tuberculosis by Wm. H. Roper and Wm. H. Ordway, Amer. Rev. of Tuber., April, 1941.

Of what value is pneumothorax in patients of middle age? Numerous studies of the results and complications attending artificial pneumothorax have been made but these have nearly all been concerned with patients between the ages of fifteen and thirty-five. Our actual knowledge of the precise merits of pneumothorax in patients over forty is still meager. For that reason a study made of World

War veterans in whom pneumothorax was instituted merits attention.

Pneumothorax in Patients Over Forty

A survey was made of 431 white World War veterans in whom pneumothorax was instituted or attempted after they had passed their fortieth birthday, during a five-year period beginning January 1, 1935. Every one of the patients had a positive sputum and a roentgenographically demonstrable cavity at the inauguration of his collapse program. Eighty-one per cent had far advanced disease; 19 per cent had moderately advanced lesions. The disease process was unilateral in 49.3 per cent and bilateral in 50.7 per cent. Fourteen per cent had at least one cavity whose diameter exceeded four cm. The average age was slightly under 44 years—seven per cent were over 50. The duration of the patients' tuberculosis prior to the attempted induction of pneumothorax ranged from one month to 18 years.

Patients with apparently permanent closure of the cavities and conversion of the sputa were classed as "successful" and these numbered 92, or 20.2 per cent. The "unsuccessful" numbered 48.7 per cent and the "impossible" 31.1 per cent. The various complications of artificial pneumothorax occurred with no greater frequency than among younger patients. Death was due directly to the complications of pneumothorax in five patients. Sixteen of the patients who died had pure tuberculous empyemata, though it is difficult to estimate the degree in which the presence of intrapleural pus contributed to these deaths, for in all cases the pulmonary lesion was actively progressive. Including these 16 cases, the fatalities consequent to complications would number only 21 or 4.9 per cent of the patients treated, about what may be expected in general.

The shorter the time the patient has been ill and the less extensive his lesion, the greater the chances for the success of the therapy and the smaller the probability of occurrence of empyema. Closure of the cavity is effected earlier in patients whose disease history has been brief, though pleural effusions (a complication of little significance in most cases) are more likely to supervene in persons who have had tuberculosis only a short time.

The time interval of cavity closure and sputum conversion varies directly with the patient's age; most of the pneumothoraces became successful in the latter half of their first year. It seems advisable, therefore, to maintain pneumothoraces of doubtful efficacy for a longer time in persons over forty than would be wise in younger patients.

Bilateral pneumothorax, properly administered in carefully selected cases, is well tolerated and ordinarily occasions no marked respiratory embarrassment. The surgical division of pleural adhesions is necessary to the completion of the collapse in a large number of persons in the fifth decade, just as it is in younger patients.

Weighing the results and the complications, the authors conclude that artificial pneumothorax is of distinct value in the treatment of patients over forty. It is not as effective as in younger persons, but neither is any other therapeutic measure. Thus far it appears that artificial pneumothorax is enduring in its effects in persons over forty, but final conclusions cannot be drawn until most or all patients in the successful group have been observed for a sufficient length of time after reexpansion to permit accurate estimation of the lasting effectiveness of their pneumothorax.

Artificial Pneumothorax in Patients Over Forty by Sidney Diamond and Hubert T. Ivey, Amer. Rev. of Tuber., April, 1941.

Controlling Therapeutic Malaria

Another solution to the problem of keeping under control the malaria induced in a patient for treatment of syphilis of the central nervous system and dementia paralytica (a chronic brain disease due to syphilitic infection) is reported in *The Journal of the American Medical Association* for June 14 by C. W. F. Winckel, M.D., Amsterdam, Netherlands. He reports that neoarsphenamine will temporarily arrest the malaria when it is necessary to do so in order to enable the patient to recover sufficiently to continue with the malaria treatment for the time required to obtained the maximum benefits from the fever.

It was reported last August that injections of theobismol would temporarily arrest the chills and fever of malaria. Dr. Winckel points out that his studies show that in reality "neoarsphenamine has a double effect in the treatment of dementia paralytica not only as a anti-syphilitic drug but also in the management of the course of the fever in therapeutic (treatment) malaria.

"Neoarphenamine cannot replace quinine in the treatment of malaria."

President's Page

The more we look on the inside of the West Virginia State Medical Association the more we realize that we actually have a very efficient and effective state organization. Compare this organization by almost any standard and it always comes out with a high rating. In its percentage of membership, in its percentage of attendance at the state and national meetings, in its subscription to outside medical publications, and in the quality of its own state medical JOURNAL, it ranks right up with the best of the other states.

As I have stated several times in previous messages on this page, I think our greatest field for improvement is in our county and district organization. Our present set-up might be classified as top-heavy. We are highly organized from the top down and poorly organized from the bottom up. We have experienced a number of incidents with reference to county organizations which prove this contention to be correct. We refer particularly to the inability of some of our county societies to cope with their own local problems, to the detriment of both the profession and the public.

It occurs to me that the outstanding professional men in each county should take it upon themselves to become the outstanding leaders of their organized profession. In many instances, this is being done. Where this type of leadership is available, we invariably find our best county organizaizations. By the same rule, we find our weakest and most ineffectual county societies where the professional leadership considers itself either too busy or too big to bother with county organization problems. We know of many counties where the leading physicians have not attended a county or state medical meeting in years, but who apparently keep well enough informed to criticize most of the things that organized medicine attempts to do.

With the threat of war staring us in the face, with an adverse decision in the anti-trust suit against the American Medical Association, and with the socialistic clamor for compulsory sickness insurance, I hope that for the next few years at least, the medical profession of our state will stick together and that the men in our counties who are capable of leadership will furnish the local leadership which we so badly need.

Robt. C. Bunford

President.

West Virginia Medical Journal

Atlas Building
P. O. Box 787
CHARLESTON, WEST VIRGINIA

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SPECIALISM, WISE OR OTHERWISE?

Three matters pertaining to general practice and the specialty boards were brought up at the Cleveland meeting of the American Medical Association which may or may not indicate some sort of a trend in modern medical practice.

The first was a resolution to create a Section on General Practice of the American Medical Association. After considerable discussion this resolution was carried over for further study.

The second proposition called for a specialty board, similar to the American Board of Surgery, the American Board of Internal Medicine, etc., for general practitioners, to be known as the American Board of General Practice. This resolution was defeated, and the strongest point urged against it is the fact that in reality the various state licensing boards actually certify general practitioners.

The third item was a pretty general discussion with reference to the various specialty boards. This discussion brought out that these boards are practically no longer under the influence or control of the A.M.A. and some doubt was expressed as to their sphere of usefulness.

This all comes right back to the question of whether or not the man in general practice is the professional equal of a certified specialist. Apparently the effort to establish a Board of General Practice was the beginning of a move to add dignity and prestige to the status of the general practitioner. Such a board might some day serve a useful purpose, particularly if it should necessitate certification at regular intervals with frequent and regular periods of general postgraduate study for the general man. Such a board would go far toward forestalling the undercurrent now detectable towards limited licensure by the state examining boards.

Whether a board of general practice would be a good thing or a bad thing, we do not attempt to say. We do recognize, however, that there is much restlessness in the profession throughout the country relative to the very marked line of demarcation between the specialists and the general men. And this is not to be wondered at when we recall that 85 per cent of all illnesses can be handled satisfactorily by the general practitioner.

TUBERCULOSIS HOPES

Although the tuberculosis death rate for the entire United States is now approximately 44 per annum per 100,000 population, the lowest ever attained, Louis I. Dublin, speaking before the American College of Chest Physicians at its recent meeting in Cleveland, predicted that another decade will see this rate cut to less than 27. The rate forty years ago was well above 200, and when we consider that such great improvement has resulted from what might be called indirect methods of attack, education, hygiene, rest, collapse therapy, et cetera, the progress achieved has been little short of marvelous. For centuries an actual specific cure has been sought and probably more different remedies have been advocated for the great white plague than any other single disease to which man is heir. The same day of Dublin's prophecy and speaking before the same audience, Ralph R. Mellon announced that he had been able to immunize guinea pigs against virulent tubercle bacilli by using diphtheria toxoid as an immunizing agent. The same week, addressing the Section on Pharmacology and Therapeutics of the American Medical Association, Feldman and

Hinshaw described their experimental work on tuberculous guinea pigs using promin (sodium P-P'-diamino-diphenyl-sulfone-N-N'-didextrose sulfonate). The treated animals all survived six months and when sacrificed and autopsied their disease had been either controlled or apparently eradicated by the treatment. In a majority of the treated animals no detectable lesions of tuberculosis were found at autopsy and in those individuals showing lesions, these appeared to be quiescent and were usually limited to the site of the inoculation with the tubercle bacilli and adjacent lymph nodes. A few of the animals showed small visceral lesions, usually in the spleen, and such lesions as were present showed histologic evidence of regression including fibrosis and calcification. All the untreated control animals died of extensive visceral tuberculosis. These workers have used the drug in a small series of cases of human tuberculosis apparently with beneficial results. In the human being certain toxic manifestations were noted, especially cyanosis and headache on oral administration, and a hemolytic anemia in one case in which the drug was administered parenterally. The authors specifically stated that their work is yet in the experimental stage and much more observation and experimentation will have to be carried on before the actual therapeutic worth of the drug can be evaluated. However, such work offers great promise, and the development of specific chemotherapy for tuberculosis in the near future appears well within the realms of possibility.

ADVERTISING RACKETS

Every once in so often the doctors of West Virginia are given an opportunity to become "prominent" physicians and surgeons through the simple expedient of paying out $5.00 or $15.00, or some intermediate amount, for the privilege of being listed in a commercial publication of "prominent" physicians and surgeons. In recent weeks there has been considerable activity along this line by the publisher of a directory of physicians, which directory is theoretically used by insurance executives and others who employ physicians "sight unseen."

These rackets take on various aspects but they all come under the general heading of taking the medical profession for a ride. A couple of years ago we figured up the income and outgo of a leading commercial directory. The income was approximately $60,000, the publication and mailing costs approximately $12,000, leaving a profit of about $48,000 to be shared by the publisher and his agents in the field.

Fortunately, the publication of the Directory of Medical Specialists, compiled by the Advisory Board of Medical Specialties and published by the Columbia University Press, has already made itself felt and in a few short years should just about eliminate the commercial directory field. To get his name in the Directory of Medical Specialties, a doctor must pass his specialty board. Unquestionably, the insurance executive who is looking for a doctor in an adjoining state would much prefer one who had passed his specialty board to one who had paid out $10.00 or more for a specialty listing in a commercial directory. For this reason, we do not believe the commercial racket is going to be with us many more years.

MEETING ATTENDANCE

Registrations of 466 at the state meeting at Charleston and of 93 West Virginia physicians at the Cleveland convention, indicate that the doctors of our state are sufficiently interested in their profession to take the time and trouble to attend the medical meetings.

Can we say as much for the attendance at the meetings of the county societies? While the component society gatherings cannot compete with the national and state meetings in scientific and social attractions, they are the places where the local problems which affect the doctor daily are discussed, and where these problems should be solved.

DR. SIMON AGAIN

The medical profession of West Virginia is already familiar with some of the gyrations of Dr. S. M. E. Simon of Williamson. The latest appearance of this gentleman in the spotlight was at the June term of the Federal Court in Huntington where he was tried upon an indictment charging him with concealing assets in a bankruptcy proceeding. The jury, after being out thirty-six minutes, brought in a verdict of guilty on each of seven counts. Dr. Simon was later sentenced to three years' imprisonment on each count, the sentences to run concurrently, and a fine of $1,000.00 was assessed on each of three of the counts. Motion to set aside the verdict and grant a new trial had been overruled before sentence was pronounced. Later a motion to admit the defendant to bail pending appeal was denied, and incarceration in the Cabell county jail was ordered. Appeal to the United States Circuit Court at Asheville, N. C., has been taken and bail denied pending the appeal.

It will be recalled that the Public Health Council after a prolonged hearing on charges brought by the Mingo County Medical Society, revoked Dr. Simon's license to practice medicine and surgery in West Virginia at its March, 1940 meeting. This action on the part of the Public Health Council was appealed to the circuit court of Mingo county. At the October, 1940 term, Judge Ferguson upheld the action of the Public Health Council and sustained the revocation of Dr. Simon's certificate of licensure. Counsel for Dr. Simon appealed Judge Ferguson's ruling to the state supreme court. The appeal is now pending and, we are informed, will be argued at the September term of West Virginia's court of last resort.

It appears to have been finally and definitely determined in the Federal trial at Huntington that Dr. Simon, referred to by the press as "the socially prominent physician" is not an American citizen, but an alien.

The health of the people is really the foundation upon which all their happiness and all their powers as a state depend.—Disraeli.

Obituaries

Doctor W. T. Oppenhimer

Dr. William Tell Oppenhimer, for more than a quarter of a century chief surgeon of the Chesapeake and Ohio Railway, died at his home in Richmond, Virginia, June 11. He was born in Fluvanna County, Virginia, March 7, 1861, but had resided in Richmond since boyhood. He was one of the youngest men ever to receive the A. B. degree from Richmond College (now the University of Richmond). He took his M. D. at the Medical College of Virginia in 1881. After graduating in medicine, he interned at Bellevue Hospital, New York City, and while there devised a splint for use in treating fractures of the neck of the humerus which was practically the aeroplane splint of today. A description of this splint, with a cut illustrating it in situ, was published in the *New York Medical Journal*, February 23, 1884.

Ill health had forced Dr. Oppenhimer into retirement some two years prior to his death, but he retained his buoyancy of spirit and his quick wit in his retirement. His patients came from all walks of life, were legion, and were unfailing in their loyalty to him. As a *News-Leader* editorial writer aptly remarks, "every patient of his had reason to remember his unfailing and sympathetic care. A visit from 'Dr. Tell' was itself a tonic."

Dr. Oppenhimer was a Fellow of the American College of Surgeons, and of the American Medical Association. In addition to his connection with the Chesapeake and Ohio, he was for many years chief surgeon of the Richmond, Fredericksburg and Potomac Railroad. He was a member of Sigma Chi, the Commonwealth Club, and St. Paul's Episcopal Church.

Doctor Ira Marshall Fisher

Dr. Ira M. Fisher, age 60, died at Oriental, North Carolina, May 16, 1941. Dr. Fisher was a graduate of the Medical College of Virginia at Richmond in 1913, and had been located at Stotesbury, West Virginia, until two years ago when he moved to Oriental, N. C. He was a member of the Raleigh County Medical Society for a number of years, and held office as both secretary and treasurer of that society.

Doctor Benjamin Clifford John

Dr. Clifford John of Morgantown died on April 25 at a St. Louis, Missouri hospital at the age of 44. Dr. John was born February 27, 1897, at Gas City, Indiana, a son of Daniel and Mary Ann John, but has resided in Morgantown since childhood. Following his early education in the public schools, Dr. John was graduated from West Virginia University in 1919 and received his M. D. from the University of Maryland in 1921. He interned at Baltimore, and later at Martha Hague Maternity Hospital in Jersey City, N. J.

In his first year at Morgantown, he served as professor of anatomy at the University School of Medicine. He was a past president of the Monongalia County Medical Society and held several offices in the state medical association.

Dr. John is survived by his wife, the former June Lilly of Bluefield; a daughter, Marion Clifford John, and three brothers and a sister, among whom is Dr. Brinley John of Morgantown.

BOOK REVIEWS

MacLeod's Physiology in Modern Medicine

MacLEOD'S PHYSIOLOGY IN MODERN MEDICINE. Ninth edition by Philip Bard, M.D., Professor of Physiology, Johns Hopkins University School of Medicine, Baltimore, Md., and others. Cloth. Pp. 1256. St. Louis. C. V. Mosby Company, 1941.

When J. J. J. MacLeod compiled the first edition of this work in 1918 his intention was to emphasize the application of physiology and biochemistry to the practice of clinical medicine. With the passage of years and the development of biochemistry, this latter subject became less emphasized and other authors were asked to contribute. This, the ninth edition, follows out the evolution of Dr. MacLeod's preceding editions. The eighth edition appeared shortly after MacLeod's death. The ninth edition is under the editorship of Dr. Philip Bard, Professor of Physiology, Johns Hopkins University School of Medicine. At the present time, the entire book has been rewritten with the collaboration of eminent physicians from several leading American university schools of medicine. It would seem that MacLeod's original purpose to make the book consist largely of a review of these subjects, "which experience has shown of especial value to the clinical investigator", has been adhered to. In addition, the book is well adapted to the needs of the student.

This has been called the age of physiological surgery. With the rapid advancements in knowledge in the field of physiology, a well founded textbook on physiology seems an essential in any physician's reference library. The present volume on the basis of its text alone qualifies for that purpose. Beyond that, the sixty-six pages of reference gives it an unusual recommendation. Charts, tables and illustrations adequately interpret the text. The format of the book is of the usual Mosby excellence.

First Aid In Emergencies

FIRST AID IN EMERGENCIES. By Eldridge L. Ellison, A.B., M.D., Sc.D., F.A.C.S. Tenth edition. Cloth. Price $1.75. Pp. 260 with 126 illustrations. Philadelphia: J. B. Lippincott Company, 1941.

This new tenth edition of this handy first aid manual is a worthy successor to its predecessor. It covers the emergencies that may happen in any one's daily life in a common sense, simple, concise manner. The language is not technical, in fact it is properly non-technical because the book is primarily designed for the laity. Throughout the 126 photographs and line drawings illuminate and simplify the text. Special attention has been given to the employment of the book in emergencies and to that end each page carries a title for quick reference. The author emphasizes that the measures described are for first aid emergencies only and are to be employed only when a doctor is not instantly available. It is a book that might well be placed in the average home and made readily available for policemen, firemen, Boy Scouts, factory workers and in the office of mine rescue workers.

Manual of Clinical Chemistry

MANUAL OF CLINICAL CHEMISTRY. By Miriam Reiner, M.Sc., Assistant Chemist to The Mount Sinai Hospital, New York. Cloth. Price $3.00. Pp. 296 with 18 illustrations. New York: Interscience Publications, Inc., 1941.

As each year passes there is found a wider employment of biochemical tests. Each year also finds a wider use of many of these tests in the majority of the private physician's offices. This little volume serves well as a guide to the performance of the simpler of these tests. It started as a few directions for internes who are called upon to perform blood sugar, urea and carbon dioxide content as emergency procedures, usually in the middle of the night. The brief manner of presenting the methods was found convenient and time saving for the internes and the laboratory technicians. Hence, other determinations carried out in the laboratory were written in the same form.

CONVENTION TRANSACTIONS

Seventy-fourth Annual Meeting, West Virginia State Medical Association, May 12, 13, 14, 1941

Although the minutes of the Council meeting, and the various committee reports appeared in the June JOURNAL, there was not sufficient time to prepare and publish the minutes of the meetings of the House of Delegates, which follow:

House of Delegates

The House of Delegates of the West Virginia State Medical Association met at the Daniel Boone Hotel, Charleston, at 3:15 p. m., Monday, May 12, 1941, with the president, Dr. Robert King Buford, Charleston, presiding. The following members were present:

Doctors T. M. Hood, V. T. Churchman, C. O. Henry, J. H. Anderson, James R. Bloss, C. R. Ogden, Walter E. Vest, Charles G. Morgan, Frank V. Langfitt, Robert King Buford, W. G. Harper, W. F. Beckner, Cole D. Genge, M. T. Morison, A. B. Bowyer, R. S. White, T. K. Oates, Herbert Duncan, H. L. Goodman, L. A. Whitaker, B. S. Brake, L. E. Neal, S. S. Hall, Russel Kessel, T. G. Reed, V. L. Peterson, M. L. Bonar, S. L. Bivens, W. W. Point, George Snyder, R. M. Fisher, W. P. Hamilton, J. W. Carney, J. L. Patterson, George Traugh, K. Y. Swisher, N. H. Dyer, R. O. Rogers, Frank Holroyd, H. G. Steele, G. W. Easley, R. B. Bailey, Howard Phillips, R. J. Reed, Jr., R. W. Love, T. L. Harris, W. D. Tillson, Richard Hamilton, David Salkin, C. E. Smith, and J. F. Biggart.

The minutes of the preceding meeting were approved as published in the WEST VIRGINIA MEDICAL JOURNAL.

Dr. Frank V. Langfitt presented a resolution by the Publication Committee, as follows:

"*Be It Resolved,* That a Library Committee consisting of three members of the West Virginia State Medical Association be hereby created; one member representing the Kanawha Medical Society, one member representing the Association, and one member representing the WEST VIRGINIA MEDICAL JOURNAL. The representative of the Association to be appointed by the president of that body and to serve as chairman; representative of the Kanawha Medical Society to be appointed by the president of that body, and the JOURNAL representative to be elected by the Publication Committee."

The resolution was voted on and adopted.

The following reports were accepted as published in the House of Delegates handbook:

Report of the Treasurer.
Report of the Executive Secretary.
Report of the Legislative Committee.
Report of the D.P.A. Advisory Committee.
Report of the Committee on Maternal Welfare.
Report of the Committee on Child Welfare.
Report of the Syphilis Committee.
Report of the Committee on Industrial Health.
Report of the Necrology Committee.

Dr. W. W. Point read the report of the Committee to Study the West Virginia Uniform Narcotic Drug Act, as follows:

"Since the purpose of the resolution introduced at the last state meeting was to suggest possible amendments to strengthen the act, information was secured from other states having laws covering the subject. Special attention was paid to the experience these several states have had in enforcing their individual statutes.

"As a result of this information and after a study of the question in its entirety, your committee is unanimously of the opinion that the present law should not be amended. The committee, however, does suggest that one or more full time inspectors be employed to investigate the many stores in our state which, as all of us know, daily violate the act."

The report was adopted.

Dr. Andrew E. Amick, chairman of the Child Welfare Committee made the following explanation of a recommendation contained in his report:

"A number of the states are setting up, or have set up, these so-called White House Follow-up Conferences, and it is the responsibility of this House of Delegates to set up this proposed Follow-up Conference, predicated on the fact that there are some 320 different lay groups, you might say some are lay "isms" at the moment, involved in the program of maternal and child welfare problems. That does not include some 22 or 24 governmental agencies involved also in this problem of maternal and child welfare. The committee simply felt that for the moment, there should be some organized attempt to be at the head of this legion of workers in these two fields, until a more detailed plan is presented."

The House of Delegates approved the committee's recommendation.

ELECTION OF OFFICERS

The following officers were elected for 1942:

President—Dr. R. O. Rogers, Bluefield.

First Vice President—Dr. Guy H. Michael, Belington.

Second Vice President—Dr. E. H. Starcher, Earling.

Treasurer—Dr. T. M. Barber, Charleston.

A.M.A. Delegate—Dr. Ivan Fawcett, Wheeling.

A.M.A. Alternate—Dr. George Evans, Clarksburg.

First District Councillor—Dr. J. C. Peck, Moundsville.

Second District Councillor—Dr. M. H. Porterfield, Martinsburg.

Third District Councillor—Dr. L. W. Deeds, Buckhannon.

Fourth District Councillor — Dr. Raymond Sloan, Huntington.

Fifth District Councillor—Dr. George W. Easley, Williamson.

Sixth District Councillor—Dr. Harold Jones, Montgomery.

The chairman of the Necrology Committee, Dr. C. O. Henry, was elected to succeed himself.

The members of the Committee on Maternal Welfare were elected to succeed themselves, as follows: Drs. James R. Bloss, chairman; M. B. Williams, E. F. Heiskell, J. F. Williams, E. J. Humphrey, H. G. Steele and W. E. Hoffman.

The members of the Committee on Child Welfare were elected to succeed themselves as follows: Drs. Andrew E. Amick, chairman; Raymond Sloan, Carl Johnson, Russell Bond, Harlow Connell, Arthur A. Shawkey, Theresa Snaith.

Dr. G. R. Maxwell and Dr. Guy Michael were elected to the Medical Service Committee to succeed Dr. John and Dr. Brown.

SECOND MEETING

The meeting convened at 9:50 p. m. on Tuesday, May 13, 1941. The meeting was called to order by Dr. Buford, president. Those present were:

Doctors T. M. Hood, C. O. Henry, Sam Holroyd, J. H. Anderson, James R. Bloss, Walter E. Vest, D. A. MacGregor, Roy Ben Miller, Charles G. Morgan, Ray M. Bobbitt, Frank V. Langfitt, Robert King Buford, W. E. Whiteside, W. G. Harper, Guy H. Michael, H. H. Howell, H. L. Hegner, H. E. Beard, T. G. Folsom, R. M. Wylie, W. F. Beckner, Cole D. Genge, L. W. Deeds, M. T. Morison, A. B. Bowyer, R. S. White, Elizabeth McFetridge, T. K. Oates, Herbert Duncan, A. B. Rinehart, H. H. Haynes, L. E. Neal, R. T. Humphries, B. S. Brake, George Heffner, P. A. Tuckwiller, Russel Kessel, T. G. Reed, V. L. Peterson, P. H. Revercomb, M. L. Bonar, H. A. Bailey, S. L. Bivenss, V. E. Holcombe, George Snyder, R. M. Fisher, E. H. Starcher, J. W. Carney, J. L. Patterson, George Traugh, K. Y. Swisher, N. H. Dyer, George Evans, R. O. Rogers, Frank Holroyd, H. G. Steele, G. W. Easley, G. R. Maxwell, R. R. Summers, R. B. Bailey, Howard Phillips, R. J. Reed, Jr., R. W. Love, A. C. Woofter, T. L. Harris, W. D. Tillson, Richard Hamilton, S. A. Ford, B. F. Matheny.

INDUSTRIAL HEALTH

Dr. Brandabur, chairman of the Industrial Health Committee, after discussing the recommendations of his committee (as published in the June JOURNAL, introduced the following resolution:

"A resolution concerning the creation of a Section on Industrial Health of the Scientific Assembly of the West Virginia State Medical Association.

"WHEREAS, Industrial Health has now assumed an important position among the branches of medical science, and

"WHEREAS, The State of West Virginia is recognized as one of the outstanding industrial states of our great country, and

"WHEREAS, The industrial physicians and surgeons of West Virginia have been carrying on their own organization for the past ten years without any direct affiliation with the West Virginia State Medical Association, and

"WHEREAS, Association leaders in the field of industrial medicine and industrial health feel that this phase of medical science should be an official section of the said Association, in order that the interest in, the knowledge of and the principles of practice of industrial health and medicine be crystallized and clarified, now therefore be it

"*Resolved*, That the House of Delegates hereby creates a Section on Industrial Health of the Scientific Assembly of said Association, which shall have the same status as the Sections on Surgery, Internal Medicine, Eye, Ear, Nose and Throat, and Pediatrics."

The resolution was voted on and adopted.

MEDICAL SERVICE COMMITTEE

Dr. Wade, in the absence of Dr. MacGregor, chairman of the Medical Service Committee, read

the report of the Medical Service Committee, as follows:

"Your Medical Service Committee was authorized and formed at the 1939 session at White Sulphur Springs. The personnel of this committee is as follows: Dr. D. A. MacGregor, Wheeling, chairman; Dr. R. O. Rogers, Bluefield; Dr. Eugene Brown, Summersville; Dr. B. C. John, Morgantown; Dr. R. H. Walker, Charleston, and Dr. James L. Wade, Parkersburg. During the past year this committee has held four or five meetings and submitted to the Council, on January 10, a recommendation that approval be given to the formation of some medical service plan of prepaid medical and surgical coverage. Such approval was granted and the committee instructed to proceed. A special sub-committee was appointed to work with Mr. Savage to ascertain the will of the individual members of the West Virginia State Medical Association. To this end a questionnaire was sent to every member of the Association and certain questions asked, with the following results:

Question: Do you favor an Association controlled plan of voluntary sickness insurance? Yes—421; approximate percentage—75 per cent. No—144; approximate percentage—25 per cent.

Question: Should such insurance cover office and house calls for minor illnesses, or cover catastrophic illness only? Minor—248; approximate percentage —62 per cent. Major only—151; approximate percentage—38 per cent.

Question: Should it cover all classes or low income group only? All—91; approximate percentage—22 per cent. Low only—324; approximate percentage—78 per cent.

Question: Should there be a separation of medical and surgical from hospital insurance? Yes—293; approximate percentage—74 per cent. No—106; approximate percentage—26 per cent.

"In response to the result of this referendum, the Medical Service Committee decided to submit a definite proposition to the House of Delegates at its meeting in Charleston, Monday, May 12, 1941. The Medical Service Committee caused to have printed proposed articles of incorporation of the 'West Virginia Medical Service Plan.' A copy of these proposed articles of incorporation were sent to every member of the House of Delegates, and officers and councillors. It is presumed that each component county medical society is familiar with these articles through their delegates and secretaries.

"These articles of incorporation constitute the summary of the main provisions and the purposes of such a plan. The by-laws under these articles will govern the actual operation of any plan. The proposed plan which is patterned closely after that of the State of Michigan, offers two types of coverage. First, surgical coverage in the hospital. Second, complete medical and surgical care, in the home, office, or hospital. Subscribers may carry either or both types of coverage.

"The Medical Service Committee feels that if this House of Delegates wishes to adopt the suggestion that some plan of prepaid sickness insurance be carried out, the adoption of the articles of incorporation will enable the Board of Directors, composed almost entirely of physicians, to develop the details of the plan and submit it in complete form to this governing body for final approval."

After some discussion, the proposed articles of incorporation were "received" by the House of Delegates.

Dr. Buford introduced Mr. William J. Burns, secretary of the Michigan State Medical Association who talked on Michigan's medical service plan, which has been in operation since February, 1940. He answered many questions in regard to medical service and passed out literature to the House describing the two services offered under Michigan's plan. (*Abstracted on p. 328*).

Dr. Buford then called upon Dr. Morris Fishbein, for some of his thoughts and ideas on the problem of medical service. (*Abstracted on p. 330*).

Dr. Fishbein concluded his brief talk on the trials and errors of working out a medical service plan, with some very interesting remarks about the history of attempts to bring about socialized medicine in Europe and America.

The meeting adjourned at 5:55 p. m.

PRESIDENT'S ADDRESS

Dr. Bobbitt reported as chairman of the Committee on the President's Address as follows:

"Your committee commends the president on his earnest and scholarly crystallization of the many problems facing the medical profession today. Our Association is responsible for bringing actively to the attention of our public officials the need of providing facilities for proper medical education of our own West Virginia boys. Doctors should interest themselves more in the problems of government, particularly in the field of public health and our state Association's legislative program.

"The committee endorses the president's attitude as regards the specialty boards and feels that this progressive step gives added protection to the public.

"Your president has pointed out the need of an equitable arrangement for payment of the costs of medical care among the low income group, but that further study and investigation of all known plans should be continued before a decision is reached, because experience has shown that a satisfactory plan has not yet been evolved.

"Our doctors are urged to keep their eyes and ears open, and particularly by personal contact with their patients, use their influence to continue the democratic principles of American medicine."

MEDICAL SERVICE

Dr. Bloss moved that the committee be thanked and commended and asked to continue their study, together with the help of the Legislative Committee and legal counsel. The motion was carried.

Dr. Ray Bobbitt offered the following resolution:

"*Be It Resolved,* That it is the opinion of the House of Delegates of the West Virginia State Medical Association that the income of Work Projects Administration workers is insufficient to meet any part of the cost of hospitalization or medical care, and the WPA is urged to provide in their budget funds for adequate care for this group of people, and that this resolution be transmitted to the WPA."

The resolution was adopted.

REEVES MONUMENT

Dr. C. O. Henry of the Monument Committee reported to the House. He asked that Mr. Savage and the president, together with Dr. J. B. Clinton of Fairmont, get together and finally get the problem disposed of.

There being no further business, the meeting adjourned at 11:00 p. m.

WOMAN'S AUXILIARY PRESIDENT

Dr. Buford presented Mrs. V. E. Holcombe, of Charleston, president of the national auxiliary. Mrs. Holcombe spoke briefly on the aims of the medical auxiliary and asked the continued support and cooperation of their doctor husbands. Mrs. Samuel Clark Red of Houston, Texas, the founder of the Woman's Auxiliary to the medical profession, was Mrs. Holcombe's guest but was unable to attend the House of Delegates meeting.

General News

Record Attendance at Cleveland

"An inundation of physicians beyond the capacity of the available hotels in Cleveland marked the annual session of the American Medical Association for 1941", *The Journal of the American Medical Association* for June 14 says in an editorial. "The attendance was 7,269, more than 1,200 above the attendance in the same city in 1934. Even the use of a boat with a tremendous capacity moored on the lake front failed to satisfy the desire for accommodations. The problem of selecting a place for the annual session that is capable of providing sufficient hotel rooms to meet the desire of American physicians who attend the annual sessions of the American Medical Association is one which now taxes the resources of our great cities. There is obvious need in the United States for some of our largest metropolitan centers to provide auditoriums such as those available in Atlantic City, and there is also need for the smaller communities which have such large auditoriums to make available sufficient hotel space to accommodate the numbers who now attend many large conventions.

"Conspicuous in the Cleveland session were the exhibits. The unanimous encomiums by physicians who spent many hours in attendance on both the scientific and the technical exhibits are proof of the tremendous value attached to these features. Invariably the doctors said that the scientific exhibits offered the greatest concentrated postgraduate education in medicine made available anywhere in this or any other country. The scope of the exhibits, the perfection of organization, the attractiveness of the displays and the earnestness of the physicians who demonstrated were, no doubt, largely responsible for the enthusiasm. Since the time when Drs. Frank Wynn and Frank Billings first gave their personal attention to this development there has been steady progress toward the practical perfection now achieved.

"The scientific sessions merit particular mention. The new Section on Anesthesiology justified its existence with attendance varying between one hundred and fifty and two hundred and with an excellent program. The general scientific meetings included the clinical session, which was received with approbation, a special session on infantile paralysis in which the National Foundation for In-

fantile Paralysis cooperated, and a meeting on medical preparedness in which all the official agencies of the government and other agencies were well represented. In many of the sections the traditional scientific contributions were varied by panel discussions, roundtables and similar meetings, indicating that the Council on Scientific Assembly and the officers of the sections are alert to the adoption of new techniques in medical teaching.

MEDICAL PREPAREDNESS

"The problems which confronted the House of Delegates were largely military, social and economic, but there were also evidences of concern of the House with problems of scientific advancement. The medical profession is ready, through the work of the Committee on Medical Preparedness, to meet the needs of the government and of civilian agencies for medical service. Obviously, as the House recommended, some central assignment authority must be developed, having available a full knowledge of the medical resources of the country, to distribute medical personnel to meet all the various needs. Continuity of medical education is absolutely essential to maintenance of an adequate supply of physicians for all these purposes. Largely discussed also was the situation now created by the certifying boards in the specialties and by some of the activities of the Advisory Board created by these certifying boards. The resolutions on this subject and the discussion associated with their presentation and consideration indicated how essential is thorough consideration before taking further action in this field. Indeed, the Council on Medical Education and Hospitals of the Association was specifically requested by the House of Delegates to manifest leadership in aiding the work of these certifying boards so that they function primarily for the good of the people and for the advancement of medical science and avoid the tendency toward the establishment of guilds which in some instances seems to prevail. The various resolutions offered on this subject will be published as part of the proceedings of the annual session, which begin in this issue of *The Journal.*

"Especially significant was the action taken by the House of Delegates to establish a Committee on Pan American Relationships, which is to be concerned with the establishment of scientific interchange with the medical societies of our South American, Mexican, Cuban, Puerto Rican and Canadian colleagues. The annual session for 1942, to be held in Atlantic City, has been announced as a Pan American session to which distinguished representatives of the other American nations will be asked to send representatives, exhibits and, indeed, to participate as much as possible. The Council on Scientific Assembly is charged by the Association with the development of the scientific aspects of this session.

"Noteworthy among the social functions of the 1941 session were the opening general meeting, which was held in the Music Hall under perfect conditions and which included addresses by distinguished clergymen, the governor of Ohio, the mayor of Cleveland and the officials of the Association, and the President's reception in the Hotel Cleveland, largely attended and with ideal arrangements for this delightful function, and the golf tournament, with the largest registration in its history. The dinners given to the Board of Trustees and the House of Delegates by the Ohio State Medical Association and the Cleveland Academy of Medicine were on a dignified plane, again perfectly arranged with the provision of delightful entertainment and exceptional cuisine.

U.S. VS. A.M.A.

"The House of Delegates voted in executive session without a dissenting vote to carry onward the trial of the case of the United States government versus the American Medical Association, et al, so that a decision may be had from the highest courts as to the place which organized scientific medicine is to occupy in our economy. The unity of the action taken, the careful consideration given to every problem presented, the insight into the affairs of medical practice in the United States testified to the extraordinarily high character of the representation in the House of Delegates, the body which is charged by the American Medical Association with the establishment of its policies.

"The 1941 session witnessed the end of the term of service of Dr. Thomas Cullen as a member of the Board of Trustees, a service which he has rendered as a contribution to the advancement of medicine for the past twelve years. In his place comes Dr. Charles W. Roberts of Atlanta, Ga., for some time a member of the House of Delegates and of the Council on Industrial Health. The death of Dr. Fred Moore (of Des Moines, Iowa) and the election of Dr. Fred Rankin (of Lexington, Ky.) to the presidency brought about two vacancies on the Council on Medical Education and Hospitals. For these positions the Board of Trustees

nominated several distinguished physicians, from whom the House of Delegates elected Drs. Harvey B. Stone of Baltimore and Russell Haden of Cleveland. In the development of American medical practice this Council's part is now so vital that these additions to the membership are considered especially fortunate.

"Thus passed the annual session of 1941—a credit to the Local Committee on Arrangements and to the city in which it was held; a credit to the official bodies of the Association who were charged with the creation of the exhibits and the handling of its affairs; a credit, indeed, to all who participated."

Sixth District Meeting

Dr. H. L. Goodman of Ronceverte and Dr. Andrew E. Amick of Charleston, councillors for the sixth district, are making plans for a district meeting at Beckley, September 17, 1941. This meeting will be held jointly with the West Virginia Tuberculosis Association. The Raleigh County Medical Society, and the officials of Pinecrest Sanatorium will serve as hosts.

The sixth district is composed of Kanawha, Boone, Fayette, Raleigh, Greenbrier, and Pocahontas counties, but it is hoped that members from other sections of the state will attend this meeting.

The program will appear in a later issue of the JOURNAL. The theme of the program will be a symposium on the timely subject of tuberculosis. The reported deaths from tuberculosis totaled 868 for West Virginia in 1940.

College of Physicians

The American College of Physicians announces its twenty-sixth annual session to be held in St. Paul, Minnesota, April 20-24, 1942.

Dr. Roger I. Lee, of Boston, is president of the college, and will be in charge of the program of general sessions and lectures. Dr. John A. Lepak, of St. Paul, has been appointed general chairman, and will be in charge of the program of hospital clinics and roundtable discussions, as well as local arrangements, entertainment, etc. Mr. Edward R. Loveland, executive secretary of the college, 4200 Pine Street, Philadelphia, will have charge of the general management of the session and the technical exhibits.

Medical Service Insurance

At the seventy-fourth annual meeting of the West Virginia State Medical Association, the Medical Service Committee submitted to the House of Delegates their proposed articles of incorporation for a West Virginia plan of medical service insurance.

During the discussion of the proposed plan, Mr. William J. Burns, executive secretary of the Michigan State Medical Society, was called on to speak to the House of Delegates in regard to the plan now operating in Michigan, and known as the Michigan Voluntary Group Medical Care Plan.

Mr. Burns said in part:

"Mr. President and members of the West Virginia State Medical Association's House of Delegates: If I were easily embarrassed I would not be happy at the prospect of all your questions about voluntary group medical care plans, but I will not become embarrassed, because I am here not to sell you a plan but merely to tell you of the experiences, the trials and the tribulations experienced in fifteen months' work with such a plan in the State of Michigan since February 1, 1940.

"While the insurance principle is used, the plan in Michigan is not insurance. The Michigan Enabling Act, No. 108 of 1939, specifically states that such a corporation is 'a charitable and benevolent institution.' This is an important feature in having enabling legislation upon which to base a plan since as a charitable and benevolent institution, it is exempt at least from state taxes.

TEN YEAR SURVEY

"In Michigan, a ten-year survey of voluntary insurance, which cost about $25,000, was made by the state society. A plan was ready in 1934 and was presented to the House of Delegates that year. However, you remember the years 1933 and 1934 were not especially good years to 'sell' anything to the public, and frankly gentlemen, this is a proposition that must be sold. The public will not rush in and seek voluntary group medical care plans regardless of what glorious benefits they receive thereunder. In 1933 and 1934 you could not sell gold bricks for half their value, and so the plan was tabled for a number of years, five to be exact. However, the philosophy behind the Michigan plan was correct, i. e., that the practice of medicine can and must be run by the doctors themselves and not by government. That is the philosophy that must be behind any plan run by a state medical association.

"In January, 1939, the Council of the Michigan State Medical Society was instructed by its House of Delegates to develop a plan based on enabling legislation, to aid the lower income groups. Enabling legislation was immediately introduced into the Michigan legislature and was passed by May, 1939 (not without a struggle!)

"The Michigan law makes a distinction between group medical care and insurance. It also separates group medical care, on one hand, and group hospital service on the other. (There are two laws, Act 108 being the group medical care act, and Act 109 the group hospital service act; one says that hospitalization shall not include medical care, and the other vice versa).

"A corporation called Michigan Medical Service was formed in July, 1939, and an executive director was employed. It took from July 1, 1939 until February 1, 1940 to develop the fundamental structure from the principles laid down by the House of Delegates. It takes six months to a year to develop a workable plan. The specialists, the economists, and others must step in and complete the job where the House of Delegates left off—always, of course, under your guidance and instruction of the House.

"Regarding the operation: The need for an integrated group hospitalization and group medical care plan led to a joint agreement with Michigan Hospital Service for the presentation of Michigan Medical Service to the public. Thus the approach to employers and employees offering a complete health service (including group hospitalization and group medical care in its various services) was made by one contact rather than two, and with one payroll deduction.

STATE-WIDE CONFERENCE

"The Michigan plan has statewide coverage with nine offices throughout the state. Two services are offered. First, the complete medical service, including home calls, office calls, and all service in the hospital. The second plan is surgical benefits only in the hospital.

"The statistics for the first year's operation may be of interest. At the end of February, 1941, after twelve months' operation, there was a reserve of $98,283 for payments to doctors. A surplus of $32,071 was created for increased benefits. That is the real surplus, after the first year's experience. In other words, out of every dollar of total income, 69 cents was paid, or is being held in reserve to pay physicians; 18 cents was spent for operating expense, the lowest administration expense for the first year of operation of any comparable hospital or medical service plan; 13 cents was left, as reserve.

MEDICAL COOPERATION

"Concerning registration of doctors: The Michigan State Medical Society has 4,527 members. At the end of the first year of Michigan Medical Service, a little more than three-fourths of the entire membership was registered with Michigan Medical Service, and by registered I mean they sent in their signed applications that they would serve subscribers in the lower income groups who joined Michigan Medical Service.

"During the first year, services were rendered to more than 9,200 patients, for which 1,694 doctors of medicine received over $300,000 in fees. Doctors in 76 of our 83 counties of Michigan rendered service, thereby proving that the plan is almost universal in Michigan.

"There is no fee schedule. The doctor does not send in a bill. He sends in a statement of his services. The medical advsiory boards composed of physicians elected by the county medical societies, decide the fees. This proved satisfactory during the first experimental year.

"The medical advisory boards are attempting over a period of some years' experience to develop a schedule of benefits that will be a guide in the payment of physicians. Here are a few items set tentatively by the medical advisory board: Office visit, $2.00; home visit, $3.00; home visit, night, $5.00; hospital visit, $2.50; consultation in office, $5.00; in the home, $10; physical examination, $5.00; thyroidectomy, $125; anesthesia, major, $10; empyema, rib resection, $75; herniotomy, $75; gastroenterostomy, $150; cholecystectomy, $125; nephrectomy, $100; hysterectomy, $125, and so on. Laboratory work and all extras are paid as extras. During the first year, the full schedule of benefits was paid.

"Committees representing each specialty group, to develop arrangements and schedules of benefits are absolutely requisite before any plan is put into operation. Such advice and agreements must be sought and made in advance of the inauguration of any plan if it is to be successful.

"Totally unexpected problems were the hardest to solve after the Michigan plan was put into operation. Most of the medical fears were readily solved. I say 'fears' advisedly. The real hard problems were

not those associated with doctors, but without the medical profession, according to the Michigan experience. Medical problems were difficult, but they certainly were not as serious as the problems of administration, of enrollment, the need for cooperation with labor and industry, the problem of approach to the public, and the problems of pioneering in general.

"There are four important needs in any group medical service program: First, the need for an excellent executive director. Second, a medical director with the wisdom of Solomon, the patience of Job, and the charity of Christ. Third, a board of directors that will not become easily discouraged; in fact, they cannot become discouraged at all. Finally, a solid rate structure.

"Michigan Medical Service has not disturbed the practice of medicine. It is merely a fiscal or financial arrangement whereby physicians are more definitely assured of prompt payment for every service from a group of patients who are assured of more service than has been their experience on the average in the past. The practice of medicine is still run by the doctors of medicine. A service plan merely aids more patients in the depressed income groups to obtain more service for which more physicians are paid than has been their wont.

"All the problems of medicine will become the problems of a group medical care plan. Some may be solved by the corporation, but most must remain for medicine to solve.

EVOLUTIONARY STEP

"Michigan's experiment represents an evolutionary step forward. Michigan's doctors hope that it will aid them in the difficult task of distributing quality medical care to the lower income groups of our state. The program has resulted in excellent public relations for the medical profession. There is little criticism about doctors of medicine since Michigan Medical Service went on the front pages and continues still to be praised by most of the metropolitan newspapers. It is the finest type of public relations the Michigan State Medical Society has ever had. The public has placed its faith in the medical profession, and the press has added its praise, best epitomized by this rather fine bit from an editorial that appeared recently:

" 'This plan evidences a growing disposition toward social responsibility. When a responsibility is cordially and feelingly met it is better met than when compelled by law.' "

Remarks by Dr. Fishbein

Following Mr. Burns and discussing Mr. Burns' remarks, Dr. Fishbein spoke essentially as follows:

"The description of the Michigan plan as Mr. Burns has given it to you is quite adequate. We have been very anxious to follow the Michigan plan and from time to time have recorded regular summaries of the work of that plan in the *Journal of the American Medical Association*, so that they are there on record. There are, as you of course know, innumerable other plans, each differing by various particulars. I have no doubt that your committee, before they determined on the Michigan plan as their guide, considered all of the other possible plans.

"There are certain points about this matter that one must keep in mind. The first is that anyone is merely fooling himself who thinks that these plans, which our various state and county societies are setting up, will postpone action in behalf of socialized medicine. These plans are not the answer to the problem of good medical care for all the people. Neither the Michigan plan nor the plans of the private insurance companies nor any other plan that anybody has figured out yet for the people of the United States, will answer the problem of good medical care for all the people.

"The questioner who pointed out that it covers only workers in groups showed very definitely that the plan does not answer anything except the question of workers in groups. The British compulsory sickness insurance plan does not do anything more than that, either. It also answers the question for nobody but workers in groups, and there you have the advantage of having an employer's contribution along with the workers' contribution, and in some places you have the advantage of a state contribution along with the workers' contribution in order to enable you to meet the entire problem.

"You have to answer the question as to what kind of medical care most of the people of the United States require.

KIND OF CARE WANTED

"Personally I have long thought that the vast majority of people do not require assistance for anything except the emergency surgical operation or the long-continued medical service. When you have the vast majority of your workers enrolling in this type of plan, you are helping to answer the question to a large extent, particularly when combined with hospitalization. But you must admit the valid-

ity of the statement which says that it is the tendency of all such plans to force the vast majority of medical care into the hospital. Whether it is for the good of humanity to be forced into hospitals for illnesses which might just as well be cared for at home, and thus increase the expense of medical service, is a question that can only be answered by a long-continued sociological observation.

"You have to offer against this plan the possibility of private insurance; by that I mean, the insurance of great numbers of workers with private insurance companies. That has been done by the Western Electric Company, the General Electric Company, the Sears-Roebuck Company, the headquarters office of the American Medical Association, and others. Those arguments have to do with the extent to which the private enterprise is fully supported by a more than adequate reserve, long experience and the ability to provide competent solicitation of the employee and to maintain renewals and all of the other factors which an experienced organization is ready to do, in contrast with an untried mutual non-profit organization coming into the field as an experiment.

HISTORY

"To see what happens to such experiments, we can only go back to history, and the wise man always goes back to history to see what happened. Anyone who says this will postpone compulsory sickness insurance, state medicine or socialized medicine is contradicting history, because it does not; it encourages that. We are going to have to look at it from that point of view. Unquestionably, in every country the story has been that the beginning of such plans were the voluntary, non-profit prepayment insurance plans and then eventually when enough people were covered and began to be dissatisfied with the way insurance was administered, or when the politicians developed enough power, the state took over the insurance.

"When you view other forms of insurance, you have to consider the possibility of the insurance which provides service against the insurance which provides cash. You have to consider what type of insurance you are going to take. Are you going to have the insurance company pay the patient cash and have him pay the hospital and doctor, or are you going to have the insurance company pay the doctor? So we have intervention between doctor and patient. At present you depend upon the patient. The vast majority of doctors say that they would prefer to make sure that they are going to get the fee. The hospitals say, 'We prefer to make sure that the insurance company pays, because if the patients get cash they will not pay us.' Under our government's social security plan for old age, the patient gets cash and buys food, fuel, clothing, and even medical care, and if he is unemployed he gets cash and buys food, fuel, clothing and even medical care. So you have to consider the possibility of cash, you have to consider the possibility of developing a policy which the patient uses instead of cash, to use Mr. Burns' statement, and when he becomes ill and goes to the hospital he deposits the policy and the hospital and the physician can have a lien on the policy, which you have as surety of cash.

PROBLEMS DIFFER

"All those things have to be thought about differently in every state and county. I do not say that there might not be six or eight or more counties in West Virginia that might not have the same picture, but it might differ considerably from the picture that would exist in other places. Mr. Burns has already mentioned certain discrepancies and difficulties that exist in various parts of Michigan, because of the variety of the population. When you are dealing with several large corporations and their employees, you are always in a position to have the corporations eventually band together to tell you what to do. They can disrupt and destroy your plan if they want to. In Michigan, one very large corporation with a tremendous number of employees decided to discontinue the plan after trial. Suppose five corporations, having talked the matter over among themselves, and having found out that their employees were willing to have this kind of insurance and to establish deductions from the payroll for it, should then listen to bids from various other agencies for the service and should discover that some other agency is willing to do it for less than your non-profit mutual corporation.

"These things I merely mention, not to cast any doubt on your experiment, nor to dissuade you from any experiment. I believe that we are going to have, in the United States for the next fifteen or twenty or more years, a good many such experiments. What the eventual future of those experiments will be, nobody can forecast. In New York the governor appointed a sickness insurance commission to study the entire question. They recently brought in a report and indicated that there was

no plan anywhere abroad that they would recommend to the State of New York as being suitable for it. But with that they also coupled the statement that none of the plans thus far set up in New York on a voluntary non-profit mutual basis seemed to answer the question any better, leaving them exactly where you are, about to commit something but not quite certain what you are going to commit.

"The reason I say that you must undertake such plans is that there is a tendency on the part of the people, and particularly among those who are voluble, to demand that something be done, and if we look at these plans primarily as an effort to meet that demand, you can say when the time comes, 'We offered it to them and the fact that they didn't want it is not our fault.' Your position is good if you offered something at a time when the demand existed.

SOCIALIZED MEDICINE

"I am willing to venture one more prediction, namely, that if you do not do this you are going to get socialized medicine. The present status of that picture is very interesting. In the first place, I would like to mention very briefly the history of these efforts in the United States. We heard practically nothing about this until 1911 and 1912 when Lloyd George brought it up in England. In 1913 the American Medical Association set up a Committee on Compulsory Sickness Insurance, and they practically brought in a report recommending that the A.M.A. get behind a system of compulsory sickness insurance. Then in 1914 a Serbian shot an archduke over in Austria and lots of things stopped that were in progress at that particular time. The war started and we got into it in 1917. In 1918 we had the care of the veterans. When the care of the veterans came up, that stopped a lot of talk about other plans of care because that ran into money.

"We passed on a little way, and Harding came in and then Coolidge, and we had Coolidge prosperity, and cab drivers got $160 a week. When they got that money they were able to pay all their bills, so nobody talked about sickness insurance. But about that time, as you will remember, along came a crash, and then the reports of a number of committees that had been studying the matter were brought out, and then when we had a time of very serious hazards to age and health and every other aspect of human life, we talked some more about sickness care. The subject was so much talked about that the A.M.A. held two or three special meetings of the House of Delegates and sent protests to Washington and the social security bill passed without any compulsory sickness insurance, and only because of the active protests of the medical profession.

"Then we had the National Health Conference and the National Health Program and the Wagner Bill. Hearings were held on that and we fought it, and the committee brought in a perfunctory report, so that died in the Congress.

ANOTHER WAR

"Now we have another war just about on us. While that war is on, as Mr. Burns so wisely predicted, it is not likely that any bills are going to go through Congress completely changing the nature of the Government of the United States, but it is possible that at some time during the progress of a war, the president might, by edict, set up something or other—I do not know, nobody knows.

"All I can say is this: That you have in the organized medical profession a very strong body, a body with great influence, which the people in general respect, notwithstanding the vast propaganda that has been put forth to break down that respect; and so nothing is likely to happen very soon without the medical profession having some opportunity to express itself.

"I do not believe I would be in a hurry about adopting this plan. I think you did very well to receive the report. I think you do very well to discuss the plan. Your committee might very well inquire not only of Michigan but of some of the other plans, just how far along they are, how far they have been studying, what their difficulties are. I would be certain as to the legal aspects of the situation in your own state in relation to the insurance commissioner and the other laws which are specifically laws of West Virginia. You might make a little more study of the people of West Virginia, of some of the corporations which might be asked to subscribe, how long they would be willing to subscribe, and then if you find a demand among any considerable number of people, and find that you can meet that demand with a plan which does not destroy the essential features—not of complete medical service, because I am very frank to admit that I do not believe the Michigan plan even gives complete medical service to those who pay $2.00 per month—you can inaugurate it. I have seen medical service all over the United States and I

know the difference between good and moderate medical service. I know that doctors, being human beings, do not give the same medical service to people who are on plans that they give to other people, either in England, Germany, France, Norway, Sweden, or Michigan. They just do not do it, because doctors are human beings.

"With all that, recognize, then, that you are embarking on an experiment, and if the people want it, try to satisfy the people and still maintain a quality of professional service that you will be proud of."

Drugs Rushed to China

Five thousand tablets of sulfaguanidine, were rushed to China on May 27 by China Clipper from San Francisco to check the spread of dysentery in the Chinese armies.

The clipper shipment follows a major gift of 300,000 tablets which sailed from San Francisco a short time ago, and will be used to acquaint Chinese doctors with the use of the new drug before sufficient quantities arrive to treat all cases of dysentery in the army.

The tablets were requested by Dr. Robert K. S. Lim, director of the Medical Relief Corps of the Chinese Red Cross after he had read about the discovery of the new compound in an American medical journal. It will be the first time that a modern army will use sulfaguanidine to check the spread of dysentery among an entire army in the field.

Dysentery, according to recent reports from China, is the most widespread sickness in the army, accounting for more sick casualties than any other cause. To eliminate it is one of the major objectives of the medical aid being provided through the current United China relief $5,000,000 drive. Reports on the use of the drug in China may be of great importance to army doctors in the United States.

American Board of Obstetrics and Gynecology

The next written examination and review of case histories (Part I) for Group B candidates will be held in various cities of the United States and Canada on Saturday, January 3, 1942, at 2:00 p. m. Candidates who successfully complete the Part I examinations proceed automatically to the Part II examinations held later in the year.

Applications for admission to Group B, Part I, examinations must be on file in the secretary's office not later than October 6, 1941. Applications for Group A must be in the secretary's office by March 1, 1942.

The general oral and pathological examinations (Part II) for all candidates (Groups A and B) will be conducted by the entire board, meeting at Atlantic City, N. J., immediately prior to the 1942 meeting of the American Medical Association.

As previously announced in the board booklet, this fiscal year (1941-1942) of the board marks the close of the two groups of classification of applicants for examination. Thereafter, the board will have only one classification of candidates, and all will be required to take the Part I and Part II examinations.

For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh, Pennsylvania.

Cardiology Course

The University of Cincinnati and the Heart Council of Cincinnati are planning to offer an intensive postgraduate course of instruction in cardiovascular diseases between September 8 and September 20 at the Cincinnati General Hospital.

Attendance will be limited to twenty-five graduate physicians and the charge will be $75.00.

Any physician interested in taking the course should communicate at once with Dr. Stanley Dorst, dean of the Medical College, Eden and Bethesda, Cincinnati.

Directory of Medical Specialists

Specialists eligible for listing in the forthcoming second edition of the Directory of Medical Specialists are urged to fill in and return promptly the questionnaires for biographic data now being mailed out by the publication office.

This directory is the official publication of the Advisory Board for Medical Specialties, issued every two years, and listings are limited to those formally certified by any of the fifteen American Boards examining in the medical specialties. There is no charge for such listings.

The second edition is now being prepared, and will be ready for distribution in February, 1942.

The directing editor is Paul Titus, M. D., 1015 Highland Building, Pittsburgh, Pennsylvania, and the secretaries of the fifteen American boards constitute the editorial board.

Electrocardiography

A two weeks electrocardiography course will be held August 18 to August 30, 1941 by Dr. Louis N. Katz, director of cardiovascular research, at Michael Reese Hospital, Chicago.

This is an intensive course offered to the general practitioner. There will be practice on several electrocardiographic machines and discussion of the principles of their construction and use. There will be sessions on interpretations of electrocardiograms illustrated by lantern slides, and practice by the student with unknown records. Routine records taken during the time of the course will be discussed. Emphasis will be placed on chest leads and on the importance of the electrocardiogram in coronary sclerosis and myocardial infarction.

As group and individual instruction will be given, the course is open to both the beginning and advanced student in electrocardiography.

For further information address Michael Reese Hospital, Cardiovascular Department, 29th and Ellis Avenue, Chicago, Illinois.

Congress of Physical Therapy

The twentieth annual scientific and clinical session of the American Congress of Physical Therapy will be held September 1 to 5, inclusive, 1941, at The Mayflower, Washington, D. C.

All the phases of physical medicine will be covered in the general program, including a special symposium on poliomyelitis. The program will be of interest to the general practitioner as well as to the specialist in physical therapy.

For information concerning the seminar and preliminary program of the convention proper, address the American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago, Illinois.

Four Weeks Obstetric Course

The Illinois State Department of Public Health and the Children's Bureau, U. S. Department of Labor is sponsoring ten four weeks courses in obstetrics at the Chicago Lying-in Hospital during the fiscal year 1941-1942. Only a limited number of physicians will be accepted for each course. The only cost to the individual is for room and board and $25.00 ($10.00 of which is refunded at the completion of the course). Applications and inquiries should be addressed to: Postgraduate Course, Department of Obstetrics and Gynecology, 5848 Drexel Avenue, Chicago, Illinois.

County Society News

Cabell County

The regular monthly meeting of the Cabell County Medical Society was held at the Hotel Prichard, Huntington, on Thursday evening, June 12. The program consisted of the motion picture studies of "Exploring With X-rays", "The Vitamin B Complex" and "Studies in Human Fertility."

COLE D. GENGE, *Secretary*.

Fayette County

The Fayette County Medical Society held their regular monthly meeting at Conley Hall, Montgomery, on May 20. Dr. Edgar W. Davis of Washington, D. C., spoke on "The Scope of Surgical Disease of the Chest."

Dr. Lewis E. Nolan, Montgomery, was admitted to membership in the society.

Dr. Claude Frazier of Montgomery has removed to Newhall, McDowell County, West Virginia.

GILBERT A. DANIEL, *Secretary*.

Hancock County

The final meeting of the season for the Hancock County Medical Society was held May 6, 1941, in the Williams Country Club, Hollidays Cove, with Dr. W. W. Elkins, an internist in the Allegheny Hospital, Pittsburgh, Pa., giving an excellent talk on "Biliary Tract Diseases." There was a fine turnout of members.

Dr. A. B. Rinehart has been appointed a delegate to the convention as Dr. Milton Wolpert will not be able to attend.

MILTON WOLPERT, *Secretary*.

Kanawha County

The June meeting of the Kanawha Medical Society was held in the ballroom of the Daniel Boone Hotel at 8:30 p. m., June 17.

The speaker was Dr. C. E. Waller, who was formerly the assistant surgeon general in charge of the States' Relations Division of the U.S.P.H.S. Dr. Waller is now the director of the Kanawha County Defense Area Health Unit. He discussed the health program in the Kanawha county defense area and explained the set-up and organization effect on the city and county health departments.

GEO. P. HEFFNER, *Acting Secretary*.

Logan County

The Logan County Medical Society held its regular monthly meeting May 21 at the Aracoma Hotel. Dr. J. W. Carney, vice president, presided. Eighteen members and two guests were present.

Dr. J. Wm. Crosson, director of the Bureau of Industrial Hygiene was the guest speaker. He discussed the general aspects of industrial hygiene and gave special emphasis to the services that the bureau offers to the practitioner.

Dr. Lloyd G. Combes of Holden was elected to membership and Doctors Patterson and Carney gave a report on the state meeting in Charleston.

On June 11, the Logan County Medical Society met at the Aracoma Hotel, at eight o'clock with Dr Carney presiding. Twenty-four members and two guests were present.

Dr. Richard J. Stevens of Huntington spoke on "Hemorrhages in the Gastrointestinal Tract." Several men joined in with an interesting discussion of this paper.

Dr. J. L. Stephenson of Emmett was elected to membership.

Dr. W. H. Parker and others discussed the advisability of the society taking concerted action in obtaining an increase in fees for physicians doing contract or list practice. Dr. D. T. Moore moved that these be made uniform throughout the county with rates of $1.50 per single man and $2.50 per married man, per month; this to go into effect July 1, 1941, and a committee to be appointed to notify each coal operator and each local union of this action. The committee will consist of Doctors W. H. Parker, D. T. Moore and J. W. Lyons.

Dr. R. R. Vaughan moved that the society purchase a lantern slide projector and a committee was appointed to do so.

Dr. Brewer moved that the society go on record as approving any method that will improve the sanitation of the city or county of Logan.

Dr. J. W. Carney gave a short report on some of the interesting things he heard and saw at the A.M.A. meeting in Cleveland.

W. P. HAMILTON, *Secretary*.

Mercer County

The Mercer County Medical Society held its regular meeting on May 28, at the Memorial Building in Princeton. The meeting was called to order by the president, Dr. L. J. Pace, and there was a good attendance.

The Tazewell County Medical Society of Tazewell, Virginia, invited the Mercer society to their meeting to be held June 26, at 6:00 p. m. and the invitation was accepted. Cards are to be sent to each member.

Dr. R. O. Rogers gave a talk on "Prepayment Plan of Medical Care." He concluded that the survey of the Associated Hospitals shows that, had their patients paid according to the fees of the Michigan Medical Service Plan during the past year, they would have paid all fees and had a ten per cent surplus.

A report of the Council and House of Delegates meeting of the seventh-fourth annual state meeting was given by Dr. Frank J. Holroyd.

Obstetrical films were presented by Dr. H. G. Steele.

The meeting adjourned to the home of Dr. Frank J. Holroyd, where refreshments were served by the wives of the Princeton doctors.

FRANK J. HOLROYD, *Secretary*.

Ohio County

At the regular meeting of the Ohio County Medical Society on the evening of March 28, Dr. John Toomey of Cleveland, Ohio, was the guest speaker. Dr. Toomey had for his subject, "The Portal of Entry in Poliomyelitis."

At the meeting on April 11 Dr. G. H. Bragdon of Pittsburgh gave an interesting talk on "Head Injuries."

The Ohio County Medical Society at a regular business meeting in May elected the following officers for the year 1941-1942:

President, Carl S. Bickel; vice president, Norvell L. Haislip; secretary, Richard D. Gill; treasurer, Edward N. Pell.

The annual dinner and golf tournament was held May 29 at the Cedar Rocks Country Club with about 75 members and guests present.

Delmas E. Greeneltch, M. D., head of the department of anesthesia of the Ohio Valley General Hospital, has been elected to membership in the society.

HAROLD G. LITTLE, *Secretary*.

Parkersburg Academy

The Academy of Medicine of Parkersburg held their April 2 meeting at St. Joseph's Hospital and

the meeting was called to order by the president, Dr. Welch England, at 9:00 p. m. Dr. Judy was added to the Professional Relations Committee. Dr. Wade moved that the Academy go on record as approving the work of the American Society for the Control of Cancer and that a committee be appointed to advise them.

The following delegates and alternates were elected: For the two year term—Dr. T. L. Harris. For the one year term—Dr. Wm. D. Tillson. Alternates—Drs. Dearman, Goodhand and Lutz.

Dr. J. William Crosson, Charleston, gave a very interesting paper on "Industrial Hygiene." Dr. Bevauqua was added to the Industrial Committee.

On May 7, at the Camden-Clark Hospital, the meeting was called to order by Dr. Welch England at 9:00 p. m. It was moved by Dr. R. B. Miller that Dr. G. D. Jeffers be voted an honorary member. Dr. Wade reported on the proposed plan for voluntary medical insurance for the State of West Virginia.

A. C. WOOFTER, *Secretary.*

Raleigh County

The regular meeting of the Raleigh County Medical Society was held in Beckley on Thursday, May 22, at 7:30 p. m. Thirty-nine members and guests were present.

The secretary announced a district meeting of the sixth councillor district which is to be held in conjunction with the West Virginia Tuberculosis Association on Wednesday, September 17, at Pinecrest Sanitarium.

Dr. S. A. Ford gave a report on the state meeting.

The guest speaker was Dr. J. L. Blanton, Fairmont, who gave a very interesting paper on "Rheumatic Fever."

CLARK KESSEL, *Secretary.*

Military Personals

Dr. Frederick H. Dobbs, formerly of Wheeling, is medical officer at Saufley Field, Naval Air Station, Pensacola, Florida. His brother Dr. Lee F. Dobbs, Jr., is with him.

Dr. E. O. Gates, Grace Hospital, Welch, is leaving for Camp Blanding, Florida, 35th Field Artillery.

Dr. Wm. Byrd Hunter, Huntington, is in the Army as medical director of the School for Medical Department Technicians at Fitzsimmons General Hospital, Denver, Colorado.

Dr. Robert M. Sonneborn, Wheeling, is on active duty at the Naval Base Hospital in Philadelphia.

Dr. Bert Bradford, Jr. of Charleston and Dr. T. R. Boling of Grantsville, both Army reserve officers, have been stationed at Carlisle Barracks, Pennsylvania, since the first of April.

The following doctors are reported as being in military service, but we do not have their stations as yet:

Drs. C. I. Butte, Elkhorn; F. H. Goodwin, Welch; Arnold Wilson, Welch; H. H. Golz and James Ralston, Clarksburg; W. H. Riheldaffer, Romney; S. Sprigg Jacob, Bethany.

Also by way of keeping up with the news as to the more senior naval medical officers in the state, Dr. James Klumpp, Huntington, was promoted to the rank of commander (corresponding to lieutenant colonel) as of July, 1938. He is now stationed with the Marine corps at Guantanamo. Dr. W. M. Sheppe, Wheeling, was promoted to rank of commander as of July, 1939. Dr. George Lyon and Dr. Wm. W. Strange of Huntington, have just recently been promoted to that rank. We may justly feel proud of having four commanders in a state as small as West Virginia.

The men composing the Wheeling Medical Specialist Unit are as follows:

W. M. Sheppe, commander—internist, Wheeling; James L. Wade, lieutenant (jg)—associate internist, Parkersburg; Lemuel C. McGee, lieutenant—associate internist, Wilmington, Delaware; Edward Phillips, lieutenant commander—surgeon, Wheeling; A. L. Osterman, lieutenant—neurologist, Wheeling; A. L. Jones, lieutenant commander—urologist, Wheeling; James K. Stewart, lieutenant—otolaryngologist, Wheeling; H. G. Little, lieutenant commander—pathologist, Wheeling; Claude Smith, lieutenant (jg)—orthopedist, Charleston; R. H. Boice, lieutenant commander—roentgenologist, Parkersburg; E. L. Armbrecht, D.D.S., lieutenant commander—oral surgeon.

The Huntington Medical Specialist Unit (No. 34) is composed of the following:

James S. Klumpp, commander—surgeon, Huntington; Edward F. Reaser, lieutenant commander—psychiatrist, Huntington; Oscar B. Biern, lieutenant commander—internist, Huntington; W. B. Thomas, lieutenant commander — ophthal-otolaryngologist, Huntington; W. E. Matthews, lieutenant—urologist, Logan; C. C. Fenton, lieutenant—pathologist, Morgantown; F. A. Scott, lieutenant—orthopedist, Huntington; vacant—roentgenologist; vacant—prosthodontist.

These two units were formed some time ago, at least six years. They are designed to function as a unit either on a hospital ship or at a large shore hospital. In time of war they are expanded by the attachment of 31 junior medical officers attached to each unit and assigned to the various specialties. The men who are the original members of the unit become the heads of the respective services. Every unit has eight nurses as floor supervisors. This plan was first discussed by Admiral P. S. Rossiter and has been perfected by Admiral Ross T. McIntyre, the present surgeon general.

New Searle Laboratories

G. D. Searle and Co., Chicago, announce that work has been started on their new laboratories and plant, located on the outskirts of Chicago, in the Skokie district.

This new plant will have built into it the experience gained by builders of pharmaceutical laboratories in the past twenty years, and many new ideas. The entire building will be completely air-conditioned.

Completely modern in design, it will not be a factory-like building but a scientific laboratory for the development and production of pharmaceutical products under modern scientific and hygienic conditions.

The laboratory atmosphere is to be carried out throughout the building, except in the auditorium, which is designed not only for meetings of the staff and workers, but for clinical meetings and demonstrations to visiting physicians and interested medical groups.

Located away from other industries in a suburban district, the building will be erected on a five-acre tract and the unused portion will be devoted to lawns and flowers, plus a recreation field.

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OBSTETRICS—Three Weeks Personal Course starting August 4th. Two Weeks Intensive Course starting October 6th. Informal Course every week.

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Woman's Auxiliary

Cleveland Convention

The program as carried out at the Cleveland convention was reported as being outstanding. The total registration of 1,400 was unusually high and there was a splendid attendance at all the sessions of the House of Delegates and many social affairs. Many outstanding doctors addressed the auxiliary groups.

President's Address

In her address before the nineteenth convention of the Woman's Auxiliary to the American Medical Association, Mrs. V. E. Holcombe of Charleston, West Virginia, president, stated that she had visited 32 states during her term of office. During the period from 1934 to 1941, the Auxiliary membership increased from 12,857 to 27,994, Mrs. Holcombe said.

Among the accomplishments and activities of the Auxiliary during the current year, Mrs. Holcombe pointed out the following: Articles have been written and circularized in pamphlet form. Medical books have been added to the libraries of many state medical associations. One Auxiliary is promoting medical library extension work in hospitals. Some southern Auxiliaries furnish books for the libraries in colored schools.

Auxiliaries of the various states have collected biographical data and photographs of doctors since early times. Several states have funds available to doctors' children to enable the boys to complete their final two years of medical school and to make possible the training of girls as nurses. State and county auxiliaries are working to promote the idea that the doctor and his family, as well as the lay public, should have regular physical examinations.

Many states are fostering essay contests on health subjects with the purpose of educating youth to higher standards.

One state inaugurated a pioneer medical memorial fund to mark the graves of the medical heroes of the past. The auxiliary of this state furnishes

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1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph., Gon. & Ven. Dis., 23, 201 (March), 1939.

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teachers of occupational therapy to interest patients in the reconstruction of their lives.

An original activity is the setting up of a doctor's shop or museum, where old medical instruments and relics of former days are preserved and displayed.

The most vital part of the work of the auxiliary is the promotion of interest in health education. Their aid is strongly felt in the field of the American Society for the Control of Cancer (the president serving on their board in an advisory capacity), tuberculosis, conservation of eyesight, rehabilitation, infantile paralysis, Red Cross, maternal welfare and community health interests of every kind. During the past year the wider use of *Hygeia* magazine in schools, public libraries and clubrooms has brought about increased dissemination of valuable health information and enlightenment.

In closing her address, Mrs. Holcombe expressed the hope that, in expending their energy, time and efforts, the Auxiliary had succeeded in interpreting to the laity the aims and objectives of scientific medicine.

Newly Elected State Officers

President, Mrs. Welch England, Parkersburg; president-elect, Mrs. Ralph Hogshead, Montgomery; first vice president, Mrs. Ross P. Daniel, Pemberton; second vice president, Mrs. George F. Evans, Clarksburg; third vice president, Mrs. P. A. Tuckwiller, Charleston; fourth vice president, Mrs. G. A. Ratcliff, Huntington; secretary, Mrs. Ralph M. Fisher, Weston; treasurer, Mrs. Harold P. Evans, Keystone.

DELEGATES TO THE A.M.A. CONVENTION

Mrs. Welch England, Parkersburg; Mrs. Geo. Evans, Clarksburg; Mrs. F. S. Harkleroad, Beckley; Mrs. O. D. Barker, Parkersburg.

ALTERNATES

Mrs. Cecil O. Post, Clarksburg; Mrs. Ben Robinson, Parkersburg.

McDowell County

The Woman's Auxiliary to the McDowell County Medical Society met on April 9 at the Appalachian Community Room in Welch. Mrs. C. B. Chapman presided and there were thirteen members and one guest present.

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Weekly Out-Patient Tumor Clinic as suggested by the American College of Surgeons.

New officers were elected as follows: Mrs. H. P. Evans, president; Mrs. A. H. Bracey, president-elect; Mrs. J. S. Vermillion, first vice president; Mrs. J. K. Cooper, second vice president; Mrs. C. F. Johnston, treasurer; secretary to be elected in May.

The Woman's Auxiliary to the McDowell County Medical Society met on May 21 at the Appalachian Room in Welch. Mrs. C. B. Chapman, president, called the meeting to order and there were 22 members present.

The advisory committee for 1941-1942 was chosen as follows: Drs. G. L. Straub, chairman; Dr. J. S. Vermillion and Dr. J. H. Anderson.

Mrs. J. H. Anderson spoke on the Auxiliary activities during the state convention at Charleston, May 12-14.

New officers installed were: President, Mrs. H. P. Evans; president-elect, Mrs. A. H. Bracey; first vice president, Mrs. J. S. Vermillion; second vice president, Mrs. J. K. Cooper; treasurer, Mrs. C. F. Johnston; secretary, Mrs. R. H. Fowlkes.

Each member pledged to sew a garment for the American Red Cross and $10.00 was donated to the cancer control fund. A miscellaneous shower of gifts was given to the outgoing president, Mrs. C. B. Chapman.

MRS. E. O. GATES, *Secretary.*

Academy of Medicine of Parkersburg

The Woman's Auxiliary to the Academy of Medicine of Parkersburg had their meeting at the Chancellor Hotel on April 8. Mrs. H. A. Giltner,

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president, conducted the meeting. There were twenty-seven members present.

Mrs. John S. Harvey of Huntington, state commander of the Women's Field Army for the Control of Cancer, made an interesting address, explaining their work in trying to educate the public, and gave an outline of the program for the April campaign for the control of cancer which has already been endorsed by the medical profession.

New officers elected were: Mrs. A. C. Woofter, president; Mrs. A. M. Jones, first vice president; Mrs. E. C. Hartman, second vice president; Mrs. Charles L. Goodhand, corresponding secretary; Mrs. E. T. Goff, recording secretary; Mrs. W. R. Goff, treasurer.

Delegates named to the state convention were: Mrs. A. C. Woofter, Mrs. C. L. Goodhand, Mrs. A. M. Jones. Alternates were Mrs. A. R. Lutz, Mrs. B. O. Robinson, Mrs. O. D. Barker and Mrs. R. S. Widmeyer.

MRS. C. L. GOODHAND, *Secretary*.

Raleigh County

The Woman's Auxiliary to the Raleigh County Medical Society met in the private dining room of the Beckley Hotel, April 21, 1941. Mrs. E. Newton DuPuy, president, called the meeting to order and 23 were present.

Officers elected for the coming year were as follows: Mrs. E. Newton DuPuy, reelected president; Mrs. M. M. Ralston, vice president; Mrs. H. A. Shaffer, secretary; Mrs. L. M. Halloran, treasurer; Mrs. D. C. Ashton, president-elect.

The Woman's Auxiliary to the Raleigh County Medical Society met on May 19 at the Beckley Hotel, Beckley. Mrs. E. Newton DuPuy, president, presided and sixteen members were present.

Dr. J. M. Coram, Raleigh county health officer, spoke to the Auxiliary on "County Health Work."

Mrs. Keith Gerchow gave a report on the state convention in Charleston, May 12-14.

Each member of the board read a summary of her year's work. June 16 at 7:00 p. m. was the date set for the next meeting, which would be a picnic for the doctors and their wives at the camp of Dr. and Mrs. Ross P. Daniel.

MRS. H. A. SHAFFER, *Secretary*.

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COMMUNICATIONS

From Major Fred E. Brammer, M. C.
Station Hospital Camp Wheeler
Macon, Ga.

May 11, 1941

I hope you have a good meeting in Charleston this week. Sorry I can't be there. Give my regards to any and all of my friends when you think of it at the meeting.

The Georgia State Medical Association holds its ninety-second annual convention at Macon this week, Tuesday through Friday, and I hope to attend a few sessions and see how they do things down here.

This is a reception center where selectees are given their first three months training in basic infantry. There are around 14,000 men here. It is a brand new camp throughout, construction having been started about last December.

The weather has been fine here, the highest temperature 87 and the lowest 49, a good breeze and nights cool enough for one or two blankets. They say it gets awfully hot, though, in July and August.

With kindest regards,

Fred E. Brammer, M. D.

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URETERAL OBSTRUCTION — INTRINSIC VERSUS EXTRINSIC*

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A very large proportion of the ailments which affect the urinary tract are either primarily or secondarily problems of obstruction. This is particularly true of lesions of the ureters. The paramount importance of maintaining the patency of the ureters is obvious to everyone. Since the rapid development of the specialty of urology, the diagnosis and treatment of diseases of the ureters constitute a rather large and important part of the work of one who devotes himself to this phase of medicine.

When we consider the problem of ureteral obstruction in the light of present knowledge, it immediately becomes a very complicated one, and this fact in itself is a great compliment to the ingenuity and diagnostic ability of the pioneers in this field. A relatively few decades ago this problem could scarcely have been said to be responsible for the furrowed brow or the graying temples of even the most distinguished of the disciples of Aesculapius. During the past decade or two, however, no time has been lost and few stones unturned in the work on this knotty situation. Indeed, the arguments and disagreements concerning one particular type of ureteral obstruction have on several occasions in recent years almost caused a schism in the urological world. It shall not be the purpose of this discussion to rekindle old fires, to drag out buried hatchets, or to take sides in any fashion in the matter of ureteral stricture but rather to make a plea for the impartial consideration of the problem of ureteral obstruction as a whole. It is definitely our opinion that too much emphasis has been placed upon this one type of ureteral obstruction and too little thought and diagnostic acumen applied to the remainder of the problem. It is our purpose to urge all who deal with ureteral obstruction to use every modern diagnostic method at

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hand to make an accurate differential diagnosis, always maintaining an alert but unprejudiced mind. By employing such measures and only by so doing will we eventually solve our difficulties.

OBSTRUCTIONS

Generally speaking the ureters may be obstructed in a variety of ways. Two main types of acquired obstruction become obvious when one considers the anatomy of the ureters and contiguous structures, that is, a ureter may be obstructed either from within or without. These main divisions of ureteral obstruction are generally classified as extraureteral or extrinsic and intraureteral or intrinsic. We shall not attempt to enumerate all the possible examples of each type. Suffice it to say that extraureteral obstruction is commonly caused by (1) abscess, (2) tumor, (3) fibrous bands of scar tissue producing permanent or fixed ureteral kinks, (4) abnormal blood vessels, and (5) pregnancy. Intraureteral obstruction is usually caused by (1) urinary calculi, (2) blood clots, (3) tumors, (4) foreign bodies, and (5) inflammation. Inflammation of the ureter may be further subdivided into (a) acute ureteritis causing obstruction by swelling and edema of the mucosa and (b) chronic ureteritis causing obstruction by scar or true stricture formation. We shall eliminate from this discussion all ureteral obstruction caused by congenital anomalies or misplacements except those caused by abnormal blood vessels as mentioned above.

Before one can possibly differentiate between extrinsic and intrinsic ureteral obstruction he must of necessity establish the fact that ureteral obstruction per se exists, and this is not always an easy matter. First of all, then, we wish to direct your special attention to this phase of the problem. Before it is possible to say that a given organ or structure in the human body is pathological it is quite imperative that a most thorough understanding of the normal anatomy, physiology, and function of the part under discussion be known. Without attempting to review all of the known facts of the anatomy, physiology, and dynamics of the ureter, it would be pertinent to our subject, we believe, to bear constantly in mind the following data which have been well proved: (1) That the ureter is by no means a rigid tube of uniform diameter, Brasch[1] having reported several instances of the two normal ureters of a subject varying as much as fifty per cent in caliber and a variance from 1.5 to seven mm. in different persons; (2) that the ureter possesses three muscular coats, an inner and outer longitudinal layer and a well developed middle or circular layer, which at three places in the ureter is normally hypertrophied or increased to form the so-called "ring muscles", these corresponding to the three usual anatomically narrowed areas—the ureteropelvic junction, the point of crossing of the iliac vessels and the pelvic brim, and the juxtavesical portion of the ureter; (3) that the urine passes from the kidney to the bladder as a result of peristaltic waves which originate, according to Frontz[2] and others, in the musculature of the pelvis and continue down the ureter to the bladder, their rate and vigor of contraction depending upon the urinary output and intraureteral pressure; (4) that slight fusiform dilatations of the ureter frequently occur above the physiological points of narrowing which may reasonably be interpreted as the normal diastolic phase of the peristaltic wave; and (5) that the smooth muscle of the ureteral wall reacts by contracting to mechanical, thermal, chemical, or electrical stimuli. It must be admitted that in accepting the above anatomical and physiological facts and variations of the normal ureter the problem of diagnosing the obstructed ureter at once becomes infinitely more difficult than if we were dealing with a uniform, inert tube unaffected by stimuli of any kind.

METHODS OF DIAGNOSIS

Let us review for a moment the methods usually employed in the diagnosis of ureteral obstruction and compare their relative value. They may be classified as (1) ureteroscopy or chromocystoscopy and (2) ureteral catheterization, including the several methods of

making the retrograde ureterogram, pyeloscopy, serial pyeloureterography, and excretion pyelography. With the cystoscope in the bladder one may readily observe the size and contour of the ureteral orifices and also the peristaltic action of the lower ureter. The rate of the efflux of the urine from the two sides may be compared. This, however, gives no indication of the character of the greater portion of the ureters. Any method of diagnosis of ureteral conditions which necessitates the introduction of a foreign body into the ureter must be viewed as a very imperfect procedure and one beset with absolute impossibilities if any question of the normal ureteral dynamics is at stake. The introduction of a ureteral catheter into the ureter may be quite sufficient to stimulate the smooth muscle contraction to such a degree that it is impossible to advance the catheter up the ureter. Every urologist has had the experience of passing a given catheter up the ureter and meeting an apparent obstruction and then at a later sitting have the same catheter pass readily to the kidney pelvis. Theoretically at least the larger the catheter used, the greater the stimulus to the musculature of the ureter and the more pronounced the ureterospasm produced. Very frequently a fold of mucous membrane may be engaged with the catheter and prevent its free passage. Normal angulations or kinks may arrest the catheter and be interpreted as pathological obstructions. Pathological kinks or fixations of the ureter due to retroperitoneal adhesions and many other causes may produce marked obstruction to the passage of ureteral catheters of varying sizes and apparent deformities of the urogram and yet not interfere with the normal function of the ureters. We believe, however, that many pathological obstructions of the ureter of extrinsic origin do occur and are frequently mistaken for intraureteral obstructions, being most often called ureteral stricture.

BOUGIE METHOD

Many observers depend entirely upon the so-called bulb or bougie method of diagnosing ureteral obstruction, particularly ureteral stricture, but disagree considerably as to the size bulb that must be passed in order to disprove the presence of stricture. If we were dealing with a standard size tube of the same caliber in every single patient, some credence might be given to the efficacy of the method. Frater[3] found that the size bulb that could be passed through the normal ureter without meeting obstruction varied from nine to 20 French. The passage of bulbs and the ascertaining of "hangs" on withdrawal and the interpretation of such evidence as being pathognomonic of ureteral obstruction without further proof to us seems highly unscientific.

X-RAY IMPORTANT

X-ray visualization of the genitourinary tract to our mind is the most important method of diagnosing and proving ureteral obstruction. Unfortunately, here also there are many chances for error and many occasions for the personal equation to unduly influence the diagnosis. We are all familiar with the difficulties encountered at times in interpreting the usual retrograde ureterogram. A normal dilatation of the ureter above the physiologically narrow points is frequently misinterpreted. Undue dilatation in the region of the catheter tip due to overdistention of the ureter at that point frequently causes enthusiasts to believe they have proven their point. From the very nature of the examination the likelihood of overdistending the ureter at one point and underfilling it at another is perfectly obvious. Add to this the normal peristaltic action of the ureter and its additional reaction to mechanical and chemical stimulation and you have sufficient basis to expect great variations and irregularities in perfectly normal ureterograms. The method of blocking the ureteral orifice to prevent escape of the radiographic solution into the bladder and thereby produce a more even filling of the entire ureter seems a much better method of obtaining a complete ureterogram. The filling of the kidney pelvis and ureter with radiographic solution and

then withdrawing the ureteral catheter and making subsequent radiographs for the purpose of determining the emptying time of the pelvis and ureter was first described by Goldstein[4] in 1921. This procedure we believe to be of great value. Of greater value yet, however, is the method of serial pyelography as described by Moore.[5] This work we believe to be the greatest contribution to the diagnosis of ureteral conditions since the first ureterogram was made. It has proven beyond shadow of doubt the inadequacy of a single ureterogram in the study of the ureter, particularly when information is sought regarding minor ureteral obstruction. Pyeloscopy combined with serial pyelography and ureterography unquestionably will give the most accurate information of the upper urinary tract obtainable by retrograde methods.

IDEAL METHOD

In 1928 Fowler[6] in discussing ureteral diagnostic methods said, "The ideal would be to have a drug that could be administered by mouth or otherwise, which when excreted by the kidney would be opaque to x-ray, as is now done in gall-bladder disease. We could then determine, free from instrument irritation, whether the urine was being delayed and where in any part of the urinary tract. Yet this idea may never be accomplished, since there may be no such drug, but the idea tends to show us that our present methods are those of potential error, and we may as well admit the same." It would appear that excretion urography which has recently been perfected would be an answer to Fowler's prayer. It is this observer's considered opinion that excretion urography or intravenous urography is a tremendous aid in diagnosing ureteral obstruction and is the logical method of studying the dynamics of the ureter in its normal habitat and free from extraneous stimuli. It is not within the province of this discussion to offer proof of this latter point. Suffice it to say that from our experience with excretion urography and also with serial retrograde pyelography we have learned that the ureter frequently assumes very unexpected and unusual positions which are entirely transient and which do not at all interfere with its normal function. One may truthfully define the entire function of the ureter as being the delivery of urine from the kidney pelvis to the bladder freely and continually without delay and without pain or discomfort.

Many so-called kinks are entirely transient and are in no way indicative of ureteral disease or obstruction. It seems reasonable to presume that any ureter that is sufficiently obstructed from any cause to produce clinical symptoms should, if the proper technical conditions are carried out, show a delayed emptying time. We have come to look upon the persistently filled ureter or any part thereof in any considerable series of plates normal in appearance though it may be, as being one of the most accurate methods of diagnosing ureteral obstruction. If the obstruction has been present for a sufficiently long time, there will, of course, be dilatation above.

Regardless of the method of demonstration of ureteral obstruction, the next problem that confronts the observer, once this diagnosis has been established, should be to differentiate between intrinsic and extrinsic obstruction. Following this we should then attempt to establish the exact etiology, which frequently is not an easy task.

A differential diagnosis can usually be made in the more common intrinsic obstructions, namely, stone, tumor, blood clot, and true stricture of the ureter, if all our common methods of diagnosis are employed and a sufficient amount of time and patience devoted to the problem.

EXTRINSIC OBSTRUCTIONS

Extrinsic obstructions are frequently much easier to suspect or diagnose than intrinsic. On the other hand, they are many times overlooked when examined by the urologist who, honest and conscientious though he may be, views pathological conditions through his own narrowed visual field. This is a tendency that everyone doing special work should definitely guard against. Again one may establish the

diagnosis of ureteral obstruction and, thinking only of intrinsic obstructions, term the lesion a ureteral stricture, particularly if he is a bit "stricture conscious." Very frequently extrinsic obstructions to the ureter produce in addition a rather marked displacement of the ureter at the point of obstruction. This is frequently seen with tumors and abscesses, either intraperitoneal or retroperitoneal. Fibrous adhesions in the retroperitoneal space frequently do likewise, producing marked fixed angulations of the ureter. One should be very careful in differentiating this type of obstruction and prove beyond all doubt that the ureter is fixed in the abnormal location and not simply a normal ureter observed in an unusual temporary location during the course of a peristaltic wave. It seems unnecessary to mention the absolute necessity of multiple x-ray exposures in making a differential study of such a case. One type of extrinsic obstruction usually does not produce any displacement of the ureter, and that is abnormal blood vessels. An extrarenal vessel crossing the ureter somewhere in the region of the ureteropelvic junction is probably the most common example of this variety of obstruction. It may be further said that this type of extrinsic ureteral obstruction is frequently the most difficult to differentiate from intrinsic obstruction, being most commonly mistaken for true ureteral stricture. Doubtless in some instances one cannot be assured without surgical exploration that an extrarenal vessel does not exist. Such exploration should certainly be made before the kidney is beyond hope of repair.

In our experience the most common extrinsic ureteral obstruction occurs in the female pelvis. Uterine enlargements, tumors, ovarian tumors and cysts, acute inflammation or abscesses involving the Fallopian tubes are the most common causes. We have also seen numerous cases of extrinsic obstruction of a ureter in the male pelvis due to an enlarged, acutely infected prostate and seminal vesicle. Too much emphasis cannot be placed upon the importance of most careful and meticulous vaginal and rectal examinations in all cases of obstruction to the lower ureters.

We are all familiar with the classical history and urological findings in cases of intrinsic obstruction of the ureter due to stone, blood clots, and ureteral stricture. It is thought unnecessary to review case reports of such common maladies. A few cases of extrinsic ureteral obstruction which have come under our observation recently and which demonstrate the value of a careful differential diagnosis will be reviewed. The case reports will be extremely brief, giving only the positive points in the urological history and examination. Some of the following cases had previously been diagnosed and treated for intrinsic ureteral obstruction, more specifically "ureteral stricture", and in each instance the obstructive process has definitely proven to be of extrinsic origin.

CASE REPORTS

Case 1: This patient, J. F., a white girl, nineteen years of age, was referred for urological study on account of several acute attacks of pain in the left costovertebral angle, radiating around to the flank and down over the course of the left ureter. The patient had had five or six such attacks during the past two months before admission. There were no urinary symptoms whatever accompanying any of the attacks of pain. There was no nausea or vomiting or other symptoms referable to the gastrointestinal tract. The pain was very severe in nature and required hypodermics of morphine for relief. The duration of the attack averaged approximately an hour and a half to two hours, and between the attacks the patient felt entirely well. There was no history of chills or fever and no history of the passage of blood or gravel in the urine. The patient's menstrual history was entirely normal. The patient's family history and past history were essentially negative.

A general physical examination demonstrated no pathological condition. A complete blood count and urinalysis showed no abnormalities. A complete urological study was done. Examination of the bladder showed no pathology, and pyelographic study of the right kidney and ureter showed them to be perfectly normal. There was no evidence of infection or calculus in the urological tract. The only abnormality noted in the entire examination

was a slight obstruction to a number six French examining catheter in the lower third of the left ureter. This obstruction was easily overcome. A moderate "hang" was also noted in this region on withdrawal of the catheter. X-ray demonstrated no ureteral dilatation above this point.

Vaginal and rectal examinations were done under gas anesthesia, and a very definite mass approximately the size of a small orange was palpable in the left fornix. The mass was freely movable and was thought to be an ovarian cyst. The patient was operated, and a large chocolate cyst of the left ovary was found densely adherent to the left pelvic brim. This was removed, and the patient made an uneventful convalescence. It has now been approximately seven years since operation, and the patient has had no further attacks of kidney colic or other trouble.

This patient's attacks of kidney colic were undoubtedly caused by intermittent ureteral obstruction due to the pressure of this fairly well fixed ovarian cyst. Had one been satisfied to consider a slight obstruction in the lower ureter to the advancement of an average-sized catheter as definite evidence of intrinsic obstruction, he might well have considered this case as such. It well illustrates, I believe, the necessity of routine pelvic and rectal examination in all cases of obstruction in the lower ureters.

Case 2: This patient, Mrs. W. G., a white woman, twenty-seven years of age, gave a history of several attacks of fairly typical kidney colic on the left side. She had been studied urologically and thought to have a ureteral stricture in the lower left ureter and had received numerous ureteral dilatations over the course of the past two years. There were frequent periods of relief but always the pain returned. She was referred for urological study, and this study showed a very definite obstruction in the lower left ureter which was overcome without great difficulty, a number six French catheter being advanced to the kidney pelvis. X-ray examination showed very definite dilatation of the left ureter from the region of the obstruction upward and also dilatation of the kidney pelvis.

There was no evidence of infection or calculus in the urological tract. On pelvic examination a very definite uterine enlargement was discovered which was thought to be a fibroid. At operation there were numerous uterine fibroids found, one of which arose from the lower left uterine segment and filled the left portion of the cul-de-sac, making very definite pressure over the left ureter. A hysterectomy was done, and since operation about a year ago the patient has had no further pain referable to the left kidney. It is interesting to note that the left ureter and kidney pelvis have returned to normal.

This case demonstrates very clearly a marked obstruction of the ureter of obviously extrinsic origin which was mistaken for a ureteral stricture.

Case 3: This patient, Mrs. D. A., a white woman, thirty-five years of age, was referred for urological examination because of a chronic pain in the lower abdomen on both sides. At times the pain was worse on the left side, and at other times it was more marked on the right. There had never been an acute attack of typical kidney colic. However, some dull aching had been experienced in the costovertebral angle on both sides. There was no history of chills or fever, hematuria, or the passage of gravel. The patient had had no urinary frequency or discomfort. The patient also gave a history of having previously had several attacks of pelvic inflammatory disease and had had several pelvic operations during the past ten years.

Complete urological study, first by intravenous urography, showed a definite delay in the emptying of the lower ureters on both sides. Almost the entire ureters were visualized during a series of plates taken at frequent intervals over a period of one hour, and there was still some contrast media remaining in the lower ureters and in the kidney pelves on both sides at the end of one hour and forty-five minutes. Cystoscopic examination also demonstrated definite obstruction in both lower ureters to number six French catheters.

With considerable difficulty the catheters were advanced past the obstructive points to the kidney pelves. There was no evidence of infection in the urological tract and no evidence of stone. Pelvic examination on this patient showed no masses in the pelvis and no evidence of acute inflammatory disease. There was moderate tenderness throughout the entire pelvis. Ureteral dilatation was recommended and has afforded the patient marked relief.

It is thought that this patient's obstruction

of the lower ureters was of extrinsic origin due to previous pelvic inflammatory disease and that this obstruction was caused by peri-ureteral adhesions. There was nothing in the examination or in the patient's history to suggest the patient's ever having had an acute infectious process in the kidney pelves or ureters.

Case 4: This patient, Mrs. I. T., a white woman, twenty-five years of age, was seen at the hospital during the course of the palliative treatment of an acute salpingitis and tubo-ovarian abscess on the right side. Her temperature had been gradually descending and, in fact, had been approximately normal for forty-eight hours. Her lower abdominal distress, which had been more marked on the right side, had been practically entirely relieved, when suddenly she developed quite an acute attack of pain in the right flank and right kidney region posteriorly. There was no elevation of temperature, and there were no accompanying urinary symptoms. The attack was relieved by morphine hypodermically, and following this a urological study was made.

There was no evidence of infection or calculus found in the urological tract. A moderate obstruction was met approximately three inches above the right ureteral orifice. However, the catheter was advanced beyond this point to the kidney pelvis without further difficulty. X-ray study of the right ureter and kidney pelvis showed a rather marked dilatation from the obstructive point upward.

At operation the right tubo-ovarian abscess was found directly over the course of the right ureter in the region of the pelvic brim, and it was thought unquestionably the cause of the patient's attack of ureteral and kidney colic. Since operation about one year ago she has remained entirely well.

This case well illustrates extrinsic ureteral obstruction of the lower ureter due to tubo-ovarian abscess without direct inflammatory involvement of the ureter itself. The obstruction to the ureter was of a purely mechanical nature.

Case 5: This patient, Mrs. C. H., a white woman, twenty-four years of age, was seen in consultation on the general surgical service where she was being treated expectantly for a tubo-ovarian abscess involving the right ovary and tube. When admitted to the hospital there were no urinary symptoms and no symptoms referable to the right kidney. Catheterized bladder urine was negative for evidence of infection in the urological tract. About a week after her admission she began to have considerable frequency and pain on urination and considerable pain referable to the right kidney which radiated down over the course of the right ureter and to the right thigh.

She was studied urologically and found to have an obstruction in the lower right ureter, and it was impossible to pass a number six French catheter by this point. X-ray showed no evidence of calculus in the urinary tract but demonstrated very clearly marked obstruction in the ureter and considerable dilatation of the ureter above as well as marked dilatation of the kidney pelvis.

The catheterized bladder specimen and right kidney specimen demonstrated numerous blood and pus cells. At operation the right tubo-ovarian abscess was found plastered down over the right ureter at the pelvic brim, and the inflammatory reaction had extended into the ureter itself. The mass was removed with considerable difficulty, great care having to be taken in order not to injure the ureteral wall. This patient had a definite obstruction in the lower right ureter due to a tubo-ovarian abscess. There was more than mere mechanical pressure; there was a true ureteritis. Following operation the patient had no more attacks of kidney colic, and in due time the urine became quite clear. The patient has been symptom-free for the past eighteen months.

This case represents obstruction to the lower right ureter due to an acute tubo-ovarian abscess, which not only made mechanical pressure upon the ureter but also involved the ureteral wall in the inflammatory process. It might be well expected that such a case would develop a true ureteral stricture following operation. So far this has not occurred in this particular case.

Case 6: This patient, J. M., a young white man, nineteen years of age, gave a history of having had numerous attacks of very definite left-sided kidney colic during the course of the past seven or eight years. There was no history of chills, fever, urinary frequency or burning with any of these attacks. There had been no passage of blood or gravel in

the urine. During the past year the patient had been studied urologically and thought to have a ureteral stricture just below the kidney pelvis on the left side. He had received ureteral dilatation without benefit.

Complete physical examination showed no abnormalities except moderate tenderness on fist percussion in the left flank. The patient's voided urine was entirely normal. He was studied urologically, and a very definite obstruction was demonstrated by x-ray just below the ureteropelvic junction on the left side. There was no evidence of infection in the urological tract and no evidence of calculus.

Considering the duration of the patient's trouble, the failure of relief by ureteral dilatation, and the absence in the patient's history of any evidence of acute infection in the urinary tract, it was thought very likely that the deformity at the ureteropelvic junction was not due to a stricture but to a congenital abnormality, possibly an extrarenal vessel. Exploration of the kidney was therefore recommended. At operation a rather large extrarenal artery was found crossing the left ureter just below the pelvis and supplying the lower pole. The artery was also accompanied by a vein. These were ligated and the patient made an uneventful convalescence.

This case well illustrates extrinsic ureteral obstruction due to an abnormal blood vessel. It is quite probable that many such cases which appear very much like a ureteral stricture are of extrinsic origin. The absence in the history of acute pyelitis and ureteritis, which must precede and be the cause of any case of true organic acquired ureteral stricture, should be the clue to make us suspect obstruction due to this source.

CONCLUSION

In conclusion may we say that it has been the purpose of this discussion to review in general the methods of diagnosing ureteral obstruction. In addition we have endeavored to point out the absolute necessity for differentiating between intrinsic and extrinsic obstruction in a given case. We believe physicians who are constantly confronted with the problem of making this differential diagnosis should keep ever in mind the many factors that may produce this lesion. We urge that we should always be critical of our diagnostic methods and entirely aware of their inadequacy in certain cases. It is further thought that a thorough study and consideration of the dynamics of the ureter will aid greatly in differentiating between an apparent obstruction and a normally functioning ureter. It is indeed certain that, if we bear all these facts in mind and apply logic and reasoning instead of fad and fancy, we will be much less apt to interpret every tortuosity of the ureter as a "kink" and every constriction below a spindle shadow outline as a "stricture." Only by so doing can we steadily build progress.

DISCUSSION

Dr. G. G. Irwin, Charleston: I quite agree with Dr. Gill that to get the best appreciation of the ureteral dynamics, intravenous urography is the method of choice. It is quite important to get a good picture, but it is equally important to get a good interpretation of the picture, and many times that is missing, to the disadvantage of the patient.

One thing should be stressed very much in intravenous urography. We should base our conclusions on our positive findings. If we make inferences from negative findings, we are very apt to go astray, and in case of doubt our suspicions or findings should be checked by retrograde pyelography.

It is my belief that Dr. Gill was the first to mention the effect of the seminal vesicles and enlarged prostates as causing ureteral strictures. It is a very, very common condition.

Dr. Gill has given us a very good summary of conditions affecting the ureter, and certainly a very masterly discussion of the means to employ for the best diagnosis of the conditions.

Dr. R. D. Gill, closing the discussion: I do not think I have anything to add, except for those who do the x-ray work. The ureters normally are not visualized. Those of us who are doing this work constantly realize that. The idea of the excretory urogram in studying the ureter and its dynamics is particularly good because we see it as it normally functions. The ureter is not filled with radiographic solution at any one time or during any one group of pictures. In fact, we do many excretory urograms and hardly see the ureter at all. We have gone to the opposite side, in fact. We know that the ureter is pathological if it is seen filled in any long series of plates.

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CANCER OF THE STOMACH*

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I HAVE chosen to discuss cancer of the stomach, and have selected this subject for the following reasons:

1. The high incidence of this affliction.

2. The grave prognosis and high mortality rate incident to this disease.

3. The general lack of interest on the part of the profession in the management of patients afflicted with this disease.

4. To disprove the idea prevalent among the laity and by far too great a number of physicians that an individual suffering with cancer of the stomach is doomed to death.

5. In the hope that a discussion of this subject may stimulate some enthusiasm and optimism and that it may radiate to others not present at this meeting and may be the means of saving lives of individuals so afflicted.

Few realize the frequency of cancer of the stomach as a cause of death. The United States Public Health Reports for 1936 show a total of deaths from cancer of 142,613. Of these 19 per cent, or 27,241, were due to cancer of the stomach. When the undiagnosed cases of pulmonary, cardiac and other complications are added, the total probably approaches 40,000.

Christopher concludes, after a very exhaustive summary of the literature, that the present operability of carcinoma of the stomach is only about 20 per cent. In the other 80 per cent of inoperables, the diagnosis is not made until so late in the course of the disease that operation is useless.

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As in any type of highly malignant growth, early diagnosis is an absolute prerequisite for complete cure. But complete cure is not the only goal at which we should aim at the present time. Five and ten year cures are not uncommon and are most gratifying, and simple palliation with relief of the horrible pain and misery of death from starvation must not be overlooked.

We are aware of the difficulties of early diagnosis of cancer of the stomach. The very nature of the disease protects it from early recognition in many instances. Cancer of the stomach per se does not produce symptoms. It is only when there is an interference with normal peristalsis, mechanical obstruction, or delayed emptying time, that signs and symptoms develop. In addition, the usual presence of an achlorhydria greatly decreases the irritation to the injured mucosa felt so early in peptic ulcer.

Dr. J. Shelton Horsley has stated that the stomach is the greatest liar on earth. A woman

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becomes pregnant; an appendix becomes slightly inflamed; a man takes one drink too many; a gallstone or kidneystone tries to make an exit; and in all these instances the stomach may respond with immediate and severe nausea and repeated vomiting. Yet carcinomas frequently grow in the walls of the stomach and reach such proportion that a cure is absolutely hopeless before enough symptoms are present to send the patient to a doctor.

EARLY DIAGNOSIS

In the face of this, how can we hope to make an early diagnosis. We must rely on a minimum of investigative findings:

1. Symptoms and signs.
2. Roentgen examination.
3. Gastric analysis.
4. Gastroscopic examination which is particularly helpful in lesions of the cardia.

As to the first of these, what are the symptoms and signs of carcinoma of the stomach? We believe that we may list them as:

1. Anorexia.
2. Epigastric distress.
3. Nausea and vomiting.
4. Weight loss.
5. General debility.
6. Elimination of blood.

However, when any or all of these conditions have developed, the situation is apt to be hopeless. An exhaustive study of the literature shows that all the leading authorities concur with us that there are no definite diagnostic signs of carcinoma of the stomach. We must stress again and again the extremely high incidence of cancer of the stomach, so that all of us will always have such a diagnosis in mind when examining a patient. We must investigate to a satisfactory explanation the slightest digestive complaints, particularly in people of thirty years or older. Any change in a previously typical ulcer history should be viewed with the greatest suspicion while the onset of digestive symptoms in a middle-aged person, previously symptom-free, should be regarded as an indication of the presence of a cancer until proven otherwise. It is only by looking for the worst in all that we can hope to do the best for the unfortunate few; that is to make a diagnosis of cancer early eonugh to permit curative operation.

Once our observation has reached the point of calling on the x-ray and gastric analysis, we have passed an extremely important milestone, since in proper hands these procedures are highly effective in deciding the diagnosis. The absence or marked diminution of hydrochloric acid is strongly confirmative of malignant invasion of the stomach, but we must remember that from 15 to 20 per cent of gastric cancers will still have free acid present and occasionally even a hyperacidity. Conversely, Jordan of the Lahey Clinic, has pointed out the strong advisability of closely following the achlorhydric patient, with the mildest of symptoms, even though repeated x-rays have been negative, since it is generally agreed that the occurrence of cancer is higher in this group. In other words, we must not rely too strongly on the fact that from 10 to 15 per cent of all people will have an achlorhydria.

X-RAY EFFICIENT

What can the roentgenologist offer toward a diagnosis. Doctor Squire will elaborate on that subject for me in just a few minutes. However, it is generally agreed that x-ray is probably above 95 per cent efficient in diagnosing cancer of the stomach. Negative and definitely positive findings we can accept as such and I will discuss these no further. I do want to call very special attention to that group of doubtful patients with the common diagnosis of lesion of the gastric mucosa, unable to rule out carcinoma. It is this group of people that requires the utmost cooperation of the internist or general practitioner, roentgenologist and surgeon. Such patients should be placed immediately on a rigid ulcer regime and their clinical course and x-ray findings should be carefully checked for a period of three to six weeks. If all clinical manifestations do not disappear and the x-ray reveals poor healing, the lesion must

be considered a cancer and the patient referred to a surgeon for appropriate treatment. In evaluating the x-ray evidence of healing, we must never forget that carcinomatous ulcer, too, will heal considerably under strict dietary regime. However, they will never completely heal, so, therefore, complete disappearance of the ulcer should be a prerequisite to dismissing the case as non-malignant.

In judging these cases, we are helped considerably by the statistics which show that 10 per cent of lesser curvature lesions, 90 per cent of antral and 100 per cent of greater curvature ulcers are malignant.

Having established a diagnosis of cancer of the stomach, we are next faced with this problem: Can we do anything for the patient? Our answer in practically every case will be a strongly affirmative "yes."

Cancer of the stomach is curable under favorable conditions, just as cancer of other organs of the body is curable under like favorable conditions.

CANCER CURABLE

The curability of cancer of the stomach has been established—proven by reports from surgical centers of unquestionable authority throughout the world, i. e., Balfour of Mayo Clinic reports in a series of 278 patients 50 per cent five years 10 per cent ten years cured. Finnister reports 20 per cent five years cured or salvaged and other surgical centers report similar results.

Cancer of the stomach is distinctly a surgical disease. All other methods of treatment will result in a mortality rate of 100 per cent. Radium has been used successfully by several surgeons in large inoperable tumors. After two or three months the growth was reduced in size sufficiently to permit radical surgical removal. We, personally, have never had experience with such a case. Surgery in the treatment of cancer of the stomach was first used by Billroth in 1877. At this time he removed a small portion of the anterior wall of the stomach. Billroth in 1881 performed the first successful pylorectomy (B-I operation) on a human being for cancer of the stomach. In 1885 he introduced the Billroth II type of operation for cancer of the stomach. The Billroth type I and II operations with various modifications form the basis of surgical treatment for cancer of the stomach.

It has been sixty-four years since surgery was introduced in the treatment of cancer of the stomach and it has been proven beyond any doubt that it is the only method of treatment that offers any hope whatsoever to the patient suffering with this disease and, yet, in the face of these proven facts, today from 70 to 75 per cent of the patients with cancer of the stomach are inoperable and doomed to death when first seen by the surgeon. Today only 25 to 30 per cent of patients with cancer of the stomach have a chance for cure when first examined by a surgeon and only about 20 per cent of this group will live five years.

COOPERATION NEEDED

Surgical technique in the management of these patients has reached apparently its maximum of accomplishment and nothing can be expected from surgery in lowering the mortality rate unless and until this large group of inoperables (70 to 75 per cent) is materially reduced when they first seek the aid of surgery. This desirable and hoped for result can only be accomplished by a cooperative educational effort on the part of the general practitioner, internist, surgeon, radiologist and the laity as to the history of this disease, to the fact that surgery alone is the treatment and that procrastination means inoperability and death.

Surgery has one more important offering to make to sufferers of this dread malady, and that is palliation. Palliation in the form of gastrostomy or jejunostomy in inoperable lesions of the cardia, and gastroenterostomy, or much better, if possible to perform, some type of exclusion operation. Next to a cure, we can think of nothing finer to offer a patient than a relatively painless death from liver metastasis rather than a long-drawn out, horrible death from starvation and dehydration.

The age and general condition of the

patient, the size and known duration of the growth, the extensiveness of the involvement as evidenced by the x-ray should not be permitted to contraindicate exploration. The findings at exploration will often surprise the best of diagnosticians, while it must be remembered that the leiomyosarcomas are among the largest gastric tumors, and yet complete cure can be definitely hoped for in such cases.

TOTAL GASTRECTOMIES

The rapidly increasing number of successful total gastrectomies has shown the feasibility of removing large sections of the stomach for thorough resection of the cancer.

In conclusion, we wish to make one statement and one plea.

Cancer of the stomach is curable.

Let us all work together, whatever our field of specialty, and bring the gastric cancer cases to an early diagnosis and surgery, knowing for certain that only thus can we offer them hope for a cure.

DISCUSSION

Dr. E. W. Squire, Charleston: Roentgenographically there are three types of carcinoma of the stomach: First, the polypoid; second, the scirrhous; third, the ulcerating lesion with tumefaction.

The benign polyps are usually multiple, they are usually pedunculated, and they produce a smooth central defect in the stomach. The malignant polypoid lesions are usually single, and they produce a rather large irregular defects in the wall of the stomach.

The infiltrating lesion in the gastric wall is usually palpable. Syphilis may sometimes produce a narrow tube which is sometimes hard to differentiate from the scirrhous carcinoma. However, lesions due to syphilis are not palpable.

Ulcerating lesions with tumefaction within the normal boundaries of the gastric lumen are readily labeled malignant lesions. If the ulcer is on the posterior wall, the tumefactive or the elevated border of the lesion appears as a black halo around this central white crater. Ulcerating lesions, even though their size is no larger than a centimeter, should be diagnosed. It is more difficult to determine the benignancy or malignancy of an ulcer without apparent tumefaction. However, if the following criteria are kept in mind, an accurate diagnosis can more often be made. First, a benign ulcer usually has a smooth neck which projects beyond the normal confines of its stoma, while a malignant ulcer usually has an irregular border to the neck. Second, the adjacent rugae of a benign ulcer tend to be accentuated and tend to converge toward the crater, while in a malignant ulcer the adjacent rugae are fixed. Third, at the time of the screen examination a benign ulcer is usually tender to palpation, while a malignant ulcer is usually not.

Gastric spasm is an important feature in a benign ulcer. There is usually always some form of gastric spasm or pylorospasm in a benign ulcer, while in a malignant ulcer the barium or opaque medium usually passes rather readily through the pylorus into the duodenal cap.

Lastly, the smaller the neck the less chance of a malignancy.

Army Library

Prompt enactment of a bill pending in Congress authorizing an appropriation for the purchase of land for the site of the Army Medical Library and Museum is urged by *The Journal of the American Medical Association* for July 19. *The Journal* says:

"Another step has been taken by Congress toward providing an adequate building for the Army Medical Library and Museum. Apparently in 1938, when the Seventy-fifth Congress appropriated $3,750,000 for the new structure, it was contemplated that the building would be constructed on property already owned by the government and hence no provision was made for the purchase of a site. Consideration was given to selecting a site on the Walter Reed Reservation, but this was abandoned because of its inaccessibility to visiting physicians who wish to use the library. The Seventy-sixth Congress appropriated $130,000 for personal services and other expenses incidental to the design and preparation of working drawings and specifications of a building for the library and museum. Now, in the Seventy-seventh Congress, a bill has passed the House (H. R. 5146) amending the 1938 act to authorize an additional appropriation for the purchase of a site for the building. The site, which has been selected by the National Capital Park and Planning Commission, is, it is understood, east of the Folger Library and the annex to the Library of Congress. Preliminary plans for the building have been prepared."

CICATRICIAL (BENIGN) STRICTURE OF ESOPHAGUS FOLLOWING VOMITING AND INTUBATION: REPORT OF THREE CASES

By PORTER P. VINSON, M. D.
Richmond, Virginia

ESOPHAGITIS is the most frequent lesion encountered in the esophagus. In the majority of cases the process is superficial, and when healing occurs, the lumen of the esophagus is not reduced in size. Occasionally, however, inflammatory changes may be sufficiently severe to penetrate the walls of the esophagus so deeply as to result in contraction of the lumen of the esophagus and interfere with passage of food into the stomach.

Inflammatory stricture in the esophagus, which is not the result of ingestion of acid or a solution of lye, may follow prolonged vomiting or passage of stomach tubes. When stricture occurs in the esophagus without a history of ingestion of caustic, especially when the patient is more than 30 years of age, the obstruction usually is assumed to be the result of malignant growth. Frequently this conclusion is proved to be incorrect and the stenosis is found to result from formation and contraction of scar tissue.

Benign stricture following vomiting or passage of stomach tubes is usually located in the lower third of the esophagus, is annular in distribution, and involves only a small portion of the esophageal wall. The stricture is always single and causes contraction of the esophagus, producing dysphagia within a month or two of the time of onset of the inflammatory process.

Roentgenoscopy frequently reveals a smooth obstruction when a moderately thick suspension of barium sulphate is ingested, but at times the area of stenosis appears irregular, especially if a small amount of food is retained in the esophagus. In other instances the lumen of the stricture is small enough to interfere with normal swallowing of solid food and yet large enough to permit passage of a thick paste of barium without apparent delay during roentgenography. If a benign stricture of this type is to be detected, complete examination of the esophagus is necessary, therefore, whenever a patient complains of dysphagia.

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In benign stricture esophagoscopic examination usually reveals smooth obstruction without ulceration unless dilating sounds have been passed just prior to direct inspection, in which case the mucous membrane may be red, edematous, or even ulcerated. At times differentiation of malignant from benign stricture may be difficult, and microscopic examination of tissue from the lesion may be required. It must be remembered that carcinoma of the esophagus can seldom be disproved, and when doubt exists as to the exact nature of a lesion, it should be treated as benign.

The following cases are reported to illustrate occurrence of stricture from healing of inflammatory reactions in the esophagus subsequent to abdominal operations which were associated with vomiting or intubation.

Case 1: A woman, 35 years of age, was operated upon February 17, 1939, for repair of a lacerated perineum with partial uterine prolapse. Abscess developed in the pelvis following operation, and surgical drainage was required. Fever, vomiting, and intestinal obstruction ensued, and the patient was ill for several weeks. A feeding tube was kept in

the esophagus for two weeks. Before leaving the hospital she had trouble swallowing a capsule. Soon she had difficulty swallowing solid food, then soft food, and finally liquid.

Esophagoscopy at her home revealed a stricture in the lower portion of the esophagus, which was thought to be malignant, although roentgenoscopy disclosed a smooth-appearing obstruction, and tissue removed for microscopic examination was reported as inflammatory only. At a second esophagoscopic study, a month later, carcinoma was again diagnosed, and the stricture was dilated with partial relief from dysphagia.

At the time of my examination, November 20, 1939, a short stricture was found 12 inches from the incisor teeth; it was dilated to 33 French. Three days later esophagoscopic study revealed a lesion in the lower portion of the esophagus. The lesion was thought to be benign, although tissue was not removed for microscopic examination. In six succeeding dilatations at increasing intervals of time the lumen of the stricture was gradually enlarged to 45 French. The last treatment was November 4, 1940, and five months later the patient was still free from dysphagia.

Case 2: A man, 60 years of age, was examined January 4, 1941. Symptoms suggestive of peptic ulcer had begun in 1924; in December, 1939, perforation suddenly developed. The ulcer was closed, but immediately after operation vomiting began and persisted for a month in spite of more or less continuous intubation. Posterior gastroenterostomy was then made, and the patient improved. As soon as he started eating soft food, obstruction was noted in the lower portion of the esophagus. He lost weight during his illness from 210 pounds to 100 pounds, gradually regaining to 162 pounds, although the difficulty in swallowing solid food continued, and regurgitation was frequently noted. Dysphagia was more pronounced when he was excited or when he ate in a crowd.

At the time of my examination, fluoroscopic study, using a thick mixture of barium sulphate, failed to reveal obstruction in the esophagus. On January 9, 1941, a short cicatricial stricture was detected 15 inches from the incisor teeth. The area of stenosis was easily dilated to 45 French without bleeding. Four days later he was able to eat normally, and two months later swallowing was still unimpaired.

Case 3: A man, 65 years of age, was examined March 21, 1941. In 1930 he began to have trouble with his stomach, and in August, 1933, he had acute perforation of a peptic ulcer. The ulcer was closed, but gastroenterostomy was not made. He did not remember details of convalescence, but thought tubes were passed into the stomach on numerous occasions. Two months after operation he noticed difficulty in swallowing solid food. Dysphagia was progressive, and in November, 1933, gastrostomy was done because of complete esophageal obstruction. Roentgenoscopic examination revealed a stricture, and esophagoscopic study disclosed a small lumen in the area of stenosis. Dilatations were performed with relief of dysphagia, although normal deglutition was not re-established.

A week before my examination (March 21, 1941), the patient noted complete obstruction for four hours following ingestion of cocoanut cake. After the cocoanut had been regurgitated, he was able to swallow liquid but not soft food. When thread had been swallowed as a guide for sounds, the stricture, which was located 15 inches from the incisor teeth, was dilated to 45 French. The stenotic area was short and easily dilated. Further dilatations will probably be required to maintain the lumen of the esophagus, but eventually normal deglutition should be restored.

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Vacationing Motorist

"The worst example of folly is the person who takes a vacation as a means of rest and relaxation and then exhausts himself in driving either to or from the place where he plans to rest and relax," *Hygeia* declares in its August issue.

"If one is planning to drive by motor either as a form of vacation or as a part of a vacation plan, drive only a few hours each day and get plenty of rest and relaxation between the periods of driving," *Hygeia* advises.

FACTORS IN CHRONIC CATARRHAL CONJUNCTIVITIS*

By L. B. SHEPPARD, M. D.
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Chronic catarrhal conjunctivitis is one of the most common eye diseases known to every practitioner. It constitutes a very large proportion of the infections seen by the eye physician. The disease is encountered in both young and old, but more frequently in the old. We are all familiar with cases of chronic conjunctivitis which fail to respond to treatment.

ANATOMY

In order to understand better the pathological processes a brief outline of the anatomy of the conjunctiva and related structures is shown. The conjunctiva is a thin membrane lining the lids and covering the anterior segment of the bulb. It is divided into three parts, the palpebral, the fornix, and the bulbar conjunctivae. The plica semilunaris is formed by the folding of the conjunctiva on the medial side. The conjunctiva covers the caruncle and continues over the puncta. It is probable that the correct flow of tears through the lacrymal duct is augmented by rhythmic breathing through normal nasal passages, while the improper removal of tears is to be encountered in the case of turgidity of the lacrymal vessels. This may often be of a reflex nature, or due to obstruction of some part of the lacrymal nasal passage. In 1885 Emil Gruening stated: "If an irritable nose can cause grave symptoms in distant parts, there is no reason it should spare the eyes that are so closely related in their nervous and vascular connections."

The conjunctival mucosa is likely to have the same infecting organisms as other mucosal surfaces. The mucosa of the eye (except for a semivalve-like orifice of the nasolachrymal duct) is in communication with the mucosa of the nose. It is therefore apt to be infected by the same pathological organisms as the nasal passages. Where there is effective downward drainage of tears, there is little chance for ascending infection. More frequently the patient may reinfect the lids by rubbing his eyes because of a continued discomfort and itching.

There are three divisions in the consideration of the causes of chronic conjunctivitis:

1. LOCAL CAUSES

1. Locally we find the causative organism in less than half of the cases. Among the organisms reported from conjunctival smears or scrapings, the Morax-Axenfeld diplobacillus, pneumococcus and staphylococcus are most frequently found.

Bacteria produce conjunctivitis by the liberation of a soluble toxin. The different types of bacteria producing conjunctivitis are: (1) may proliferate superficially as Morax-Axenfeld or staphylococcus; (2) may grow on living cells, as Koch-Weeks bacillus; (3) may reproduce beneath epithelium, as gonococcus.

Thygeson concluded that among the bacterial causes of conjunctivitis, the Morax-Axenfeld bacillus had been universally recognized. He repeatedly produced evidence that toxin producing strains of staphylococcus aureus and staphylococcus albus are a frequent cause of chronic conjunctivitis. Some of the characteristics of this conjunctivitis are similar to that produced by the diplobacillus

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*Read before the Association of Surgeons of the Chesapeake and Ohio Railway, White Sulphur Springs, West Virginia, November, 1940.

of Morax and are as follows: (1) A prolonged course; (2) the formation of a toxin liberated by the bacteria growing on the conjunctival secretions or on dead cells; (3) the frequency of a complicating blepharitis.

It is therefore seen that staphylococcus and Morax conjunctivitis cannot be distinguished clinically.

In another report of 205 cases of conjunctivitis Thygeson found staphylococcus aureus in 175 cases, pneumococci in 21 cases, and Morax in nine cases.

CONJUNCTIVAL INFECTIOUS ORGANISMS FOUND IN RICHMOND

Staphylococcus aureus	92
Staphylococcus albus	68
Staphylococcus citreus	1
Streptococcus viridans	2
Streptococcus hemolyticus	3
Pneumococcus	6
B. coli	2
No growth	6
Total	180

(These cultures were taken on patients at the Medical College of Virginia clinic and on private patients of Dr. Bryce and of my own. The cultures were made by the bacteriological department of the Medical College of Virginia).

If we assume that bacteria are the cause of all conjunctivitis, then we must conclude that bacteria or their toxins have already invaded well beneath the surface when we see these cases. This would account for so many negative smears and our frequent disappointments in finding that our antiseptic solutions and salves applied to the surface, while not without value, are less effective than we desire.

The functioning of the lacrymal system is of primary importance in the natural conjunctival defense mechanism. The production of a normal amount of tears with a normal lysozyme concentration is essential. Lysozyme is an antibacterial enzyme and a potent protection against infection. The mechanical action of the lids and proper drainage of tears through the puncta with free passage through the lacrymal apparatus into the nose are always essential.

Refractive errors, especially hypermetropia, or astigmatism, cause eye strain and are contributing factors in chronic conjunctivitis.

Ingrowing lashes, conjunctival concretions, and small chalazia are irritating elements in prolonging a conjunctivitis.

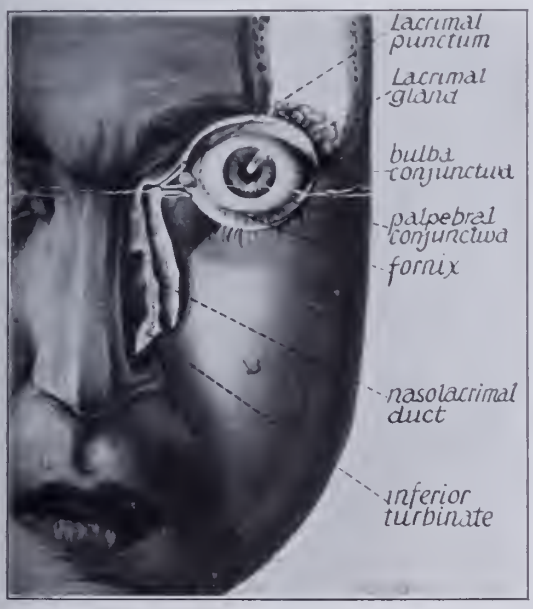
2. GENERAL CAUSES

Infection having established itself in some part of the body may secondarily affect the eye and is spoken of as endogenous. Although the exact mechanism is not known, the endogenous infection causes a great percentage of eye disease. The infected sinus or tooth are most frequently recognized among the foci of infection. General malnutrition, anemia, lack of proper rest, and nervous conditions are certainly indirect causes which irritate the catarrhal condition. As time and science move on, we find more and more unexplained prolonged cases of conjunctivitis reported as due to allergy. The term "allergy" refers to an altered biological response of body tissues which have been changed by previous contacts with an antigen so that the subsequent reactions to the same inciting agent may be entirely different from those produced by the initial contact. In short, allergy is an altered human hypersensitiveness. Vaughan has pointed out that an antigen becomes more concentrated in irritated areas or regions of inflammation than it does elsewhere. "If this be true, such a local allergic reaction could be counted upon to result in a flare-up of organic pathology." As Ruedemann has recently pointed out in his discussion on ocular allergy, "The process is irritative and chronic, tending to recur over a period of years. Allergy does not explain all the conditions around the eyes. However, in patients who suffer recurring lesions, and when all foci of infection, including the cervix and prostate have been searched for and removed, bacterial as well as general allergy should be considered." In the study and treatment of any disease all possibilities must be considered. It therefore justifies one to consider the possibility of an allergic cause in any recurrent keratoconjunctivitis. Phlyctenular keratocon-

junctivitis has its characteristic nodular affection occurring mainly in children, as an allergic response on the part of the corneal and conjunctival epithelium, to the toxin from some endogenous infection to which the cells have become sensitized. I am certain that many of us have noted a very definite increase in this condition in both adults and children in the past year. The reason for this is unexplained. The field of allergy is an excellent one for clinical study.

3. EXOGENOUS CAUSES

Factors outside the body which contribute to the infections are: Smoke, dust, pollens and climate.



Drawing of dissection showing the lacrymal apparatus and conjunctiva from the front.

You are all familiar with the picture of chronic conjunctivitis. The disease is more commonly found in elderly people and varies from a slight hyperemia with a granular sensation in the morning to a thickened conjunctiva with a mucopurulent secretion. Symptoms such as heaviness of the lids, sensation such as a foreign body, or photophobia are often worse at night after a day's work.

The history is of considerable importance. First, one should consider the duration and then the amount of treatment the patient has received. Cases of burning, itching, and smarting of the lids with lacrymation often have normal eye findings but respond well to nasal treatments.

TREATMENT

From the preceding discussion we can see that the treatment of chronic conjunctivitis is primarily the removal of the cause. An attempt should be made to isolate the infecting organism. At the same time the irritating factors should be searched for and corrected. The conjunctiva with its antibacterial enzyme can overcome most infections if the irritating or predisposing factors are removed. All pyorrhea pockets must be removed and nasal infections must be eliminated. Blepharitis is a frequent complication. Massage of the lids will empty the Meibomian glands of a yellowish secretion. This should be repeated every few days. Sulfanilamide ointment (six per cent) has proven of a very great value in many of these chronic cases. This is massaged into the lids t.i.d. after irrigations. In recent years sulfanilamide has been used for many infections. This drug does not kill the organism itself, but prevents multiplication and allows the natural body immunization powers to overcome the organism. The infection of the lacrymal sac must be eliminated. If this proves ineffective, extirpation is necessary. A constant watch should be kept on the general health and habits of the patient. Sleep and rest are most important. Everyone here can cite patients who have had chronic conjunctivitis relieved by taking a vacation. Eyestrain is one of the most frequent irritating factors in any conjunctivitis which does not yield to ordinary treatment; therefore, a careful refraction should be made.

Cleanliness is the most important point in local treatment. Mild astringents may be used, but frequent changes of lotions are beneficial. The astringents such as boric acid, zinc sulphate, and tannic acid are often used. A wash containing a dram each of salt, soda, boric acid and glycerine to the quart is excellent. If infection is evident, a few treatments of silver nitrate are advised. I am convinced that a fresh solution of silver nitrate

one-fifth per cent gives good results and does not irritate the lids. If the infection is due to Morax-Axenfeld bacillus, which affects chiefly the corners of the eye and lid margins, zinc sulphate drops in the eye, as a mild astringent, soon relieves the symptoms and the condition. The drops should be continued for two to three weeks after the patient is symptom free. Zinc oxide ointment to the lids benefits the condition and prevents the lids from adhering. Recently zinc ionization has been used, as the drug can be driven into the conjunctival tissue by this method.

Many types of chronic conjunctivitis are due to staphylococci. Massaging the lids with metaphen ointment has proven effective. Staphylococcus toxoid and pyophage have been useful in certain cases. In long-standing cases, when follicles have developed, copper citrate (five per cent) ointment has given a great deal of improvement. The treatment of all forms of allergic conjunctivitis is essentially the same. First, palliative methods for the local condition, as ointment of epinephrin two per cent and holocaine one per cent; second, to avoid all contacts with the exciting agent once it has been determined; third, partial avoidance can be reinforced by desensitizing therapy.

SUMMARY

Chronic conjunctivitis is usually infectious in nature. This infection has three classes:

(1) The organism from an outside source may attack the eye.

(2) That which is due to extension from neighboring structures.

(3) It may be an endogenous infection producing a toxin which acts as a constant source of irritation.

After diagnosis, removal of the cause and persistent treatment are of primary importance.

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Dysentery and Jaundice

The possibility that bacillary dysentery, a type of diarrhea, and infectious jaundice may be related, at least in some instances, is suggested in the report of a simultaneous outbreak of the two diseases in an institution caring for mentally deficient boys and girls, made by Frederick C. Thorne, M.D., and J. Seeley Estabrook, M.D., Brandon, Vt., in *The Journal of the American Medical Association* for July 12.

"The association of bacillary dysentery and infectious jaundice in simultaneous epidemics is not a common occurrence," the two physicians say. "A survey of the literature reveals no mention of such a coincidence, although private conversations with general practitioners in Vermont have uncovered reports of minor seasonal (usually autumnal) epidemics of diarrhea with mild jaundice. Bacillary dysentery is a well known cause of serious epidemics of diarrheal disease in institutions, army camps and other places in which large numbers of persons exist in crowded, unsanitary conditions."

The epidemic, the authors say, "presented three distinct phases. The patients (32) who contracted the disease early * * * showed nausea, vomiting, abdominal cramps and diarrhea and were treated symptomatically as having seasonal digestive upsets until subsequent bacteriologic studies established the diagnosis of bacillary dysentery (Flexner type). The second phase was characterized by a group of cases (26) in which the symptoms of dysentery were complicated by the appearance of jaundice about one week after the acute onset of the diarrheal disease. The third phase involved a group of cases (62) presenting symptoms of infectious jaundice alone. * * *"

MENSTRUAL DISORDERS*

By H. E. BEARD, M. D.
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THE onset of menstruation marks the change from childhood to womanhood.

The age at which the menses occur varies climatically; that is, in northern countries the age is about sixteen to seventeen years, in this area thirteen to fourteen, and in the tropical countries about eleven to twelve years of age. The biological tendencies of the individual family and race usually determines the age of onset, along with the characteristic changes in physical and emotional status of the individual. They become sex conscious along with the development of the breasts, the rounded contour of body and the advent of pubic and axillary hair.

Immediately following the menarche the cycle may prove very unpredictable as to regularity and profuseness. Most cycles run a 26, 28, 30 or 32 day interval, but is not considered abnormal if it be shorter or much longer than the average cycle, providing the regularity is consistent and there are no clinical symptoms except that the parents are worried about daughters irregular periods and fear she is developing tuberculosis, which is usually the reason for consulting the family doctor. The irregular cycles of puberty in which the menstruation is not normal in amount and rhythm, but may be irregular and profuse, will in a great number of cases after several months without treatment become regular and normal. It is unwise to institute therapy for delayed menstruation at puberty until after the patient is fifteen years of age.

The so-called functional bleeding cases are sometimes so profuse as to necessitate transfusion and treatment for a secondary anemia which may follow. A careful physical and rectal examination of these young girls should be made to determine the size, position of uterus and any abnormality of adenexa. If no pathology is found, a curettage for diagnosis and immediate control of hemorrhage may become necessary. Transfusions, if indicated, regulation of diet, exercise and treatment of secondary anemia are indicated, allowing the patient sufficient time in which to gain a hormone balance that will regulate and moderate her flow.

THE AUTHOR

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Chlorosis which at present is a very rare disease may occasionally require x-ray treatment to control hemorrhage along with transfusions and glandular therapy.

The most accepted method of treatment for functional bleeding at present in the young individual is organotherapy: (1) Pregnancy urine preparations, (2) progestin, (3) testosterone.

In the laboratories of the average hospital equipment and facilities for determining the hormone content of blood is impossible. Therefore, with the facts and data resulting from carefully kept clinical records in the teaching institutions where accurate laboratory data are recorded, we are given a relative dose for guidance in carrying on treatment. This dose must be raised or lowered, as indicated after trial, for the individual person under treatment.

The pregnancy urine preparation was first used. Dr. Novak in the *American Journal of Surgery* for April, 1940, states that while it is now known that the substances in humans do not bring about the hope for ovarian luteinization, the fact remains that in at least

*Read before the Barbour-Randolph-Tucker County Medical Society, Thomas, West Virginia, December 12, 1940.

a proportion of cases they do bring about cessation or lessening of the bleeding period, and are still widely employed sometimes with benefit, but more often with disappointment. The average dose of these preparations is from 200 to 500 units daily during the bleeding period.

Progestrone when first isolated was very expensive and not available for clinical use, but since the absence of progestrone seemed to be the outstanding endocrine deficiency, this naturally was used in treating functional bleeding, but did not produce perfect results. The dose is one to five mgm. daily, a higher dosage being prohibitive to many persons because of the cost of the preparation.

TESTOSTERONE

The third hormone isolated is testosterone. When this hormone is used it should be given throughout the cycle and not only during the bleeding period. The suggested dose of ten to twenty-five mgm. twice a week will usually be sufficient. Several cases have been published recently in which male characteristics have developed following prolonged administration of a larger dosage. These characteristics usually subside when the testosterone is withdrawn and produce no permanent effect. The cost is again prohibitive for many patients.

Lawrence M. Randall suggested the trial use in atypical uterine bleeding, of moccasin venom in small doses, increasing with susceptibility, more or less as an empirical treatment.

In functional bleeding when occurring in women of the menopausal age, and a larger majority of cases do come from women of this age, organotherapy plays an important rôle in the treatment, although as in young women the results are as variable as the forms of treatment.

Shute of Ontario, Canada, in 1938 stated that it is possible to estimate the blood estrogenic substance as an aid in treating endocrine metrorrhagia. Generally speaking, menstrual abnormalities related to estrin deficiency need estrogen. Those with estrin excess need anti-estrogene, such as thyroid extract, pronutin, progestone or wheat-germ oil.

Browning and Frick state that since menorrhagia and metrorrhagia are only indications of an underlying disease which may be simple or malignant, all modern means of clinical history and laboratory tests, with sections of tissue where feasible should be utilized in making a definite diagnosis before instituting any specific course of treatment.

The advent of radiology and x-ray in the field of gynecology has helped to eliminate somewhat the problem of pelvic surgery in the treatment of functional uterine bleeding. A careful history, physical examination and possibly a diagnostic curettement to eliminate malignancy, fibroids, ovarian cysts and other serious pelvic pathology that could best be taken care of by surgery before radium or x-ray therapy would be advised. It is assumed that the child-bearing age was passed or a sufficient number of children were present so that sterilization was desired.

Dysmenorrhea is a term made up of three Greek words—difficult, month and flow, meaning painful menstruation.

PRIMARY DYSMENORRHEA

The cause and treatment of primary dysmenorrhea have for a long time been a bugbear to the general practitioner. Most frequently it occurs in patients who have physically no abnormality in their pelvic organs. The pain is usually severe and intermittent or spasmodic in character, starting mildly the first or second day before onset of flow, and gradually increasing in severity and rapidity until flow is well established when usually the pain subsides gradually or may stop abruptly, but frequently persists during the entire period.

Anteflexion causing mechanical obstruction is often listed as a causative factor, but it has been observed that only a small per cent of patients suffering with dysmenorrhea have any pathology or an anatomical deviation from a normal uterus. The menstrual flow normally is only about four drops per minute and anteflexion would have to be very acute

to interfere with that small amount; that is, excluding ball-valve cervical polyps or fibroids protruding and blocking the cervical canal which might cause complete mechanical blocking and would account for a very small per cent of cases only.

Hypoplasia (infantile uterus) is frequently associated with dysmenorrhea, but more often dysmenorrhea is acquired and may not come on until the patient has menstruated for several years. Psychological factors may produce dysmenorrhea by bearing on the subconsciousness reflexes; the patient fears each period because she expects to have pain and consequently does have it.

Primary dysmenorrhea in young school girls presents a public health problem and also in state aid districts, a physical loss to the local school board because their state aid is based on per capita of daily attendance.

Dr. Mary Hodges reports in a Baltimore surery that 6.3 per cent of healthy girls spend one day or more in bed; another writer quotes the rate of 17 per cent one day or more in bed each month. In 1,606 high school students 10 per cent, or 160 girls, suffered from dysmenorrhea so badly they either had to go to bed or lie down for two or three hours at a time during the first and second day of the flow. Most of them had no pathology and were called primary dysmenorrhea. Most of them were also malnutrition cases, thin, anemic, fatigued easily, constipated, poor circulation, foci of infections, nervous, restless, no supervision at home, and took for granted they were to have this discomfort each month because their mother and older sister had it. Gland therapy, insulin, carbohydrates, calcium, surgery when indicated, general health improvement and measures of general hygiene are foremost in treatment.

M. Goldwasser of California, a school health physician, has the following outline for dysmenorrhea in high school students.

FOR USE BY TEACHERS IN SCHOOL

1. Rest instead of education.
2. Excused from extra school duties.
3. Help undernourished girls to receive more lunches and more cod liver oil; transportation to and from school.
4. Corrective physical exercise after improvement has taken place.
5. Psychotherapy.
6. Regular physical training only after several months and after symptoms have entirely disappeared.

AT HOME

1. Rest one hour after returning from school.
2. To bed not later than nine p. m.
3. Take warm baths three times a week.
4. Avoid strenuous exercise and dancing.
5. Do not walk long distances.
6. Drink a cup of warm water before breakfast and supper.
7. Drink two cups or more of milk daily.
8. Eat daily a raw apple, carrots and two oranges.
9. Tonics containing iron and iodine are best.
10. Take a tablespoonful of glucose in water twice daily for one week preceding menses.

Under this regime 75 per cent of the dysmenorrhea students recovered; 15 per cent were improved; in 10 per cent no improvement was noted.

The general physical and nervous state of the patient may play a great rôle in dysmenorrhea, for if the patient is in a run down physical condition, pain is not tolerated as in healthy individuals. This can in a measure, be corrected by diet and physical exercise under proper supervision.

It is usually agreed that the spasmodic contraction of uterine muscles causes the immediate pain and most present day treatments are based on the lack of progesterone in the blood stream which inhibits uterine motility and the increased theelin which excites motility of the uterine musculature.

Surgical treatment for dysmenorrhea as given by the report of J. C. Masson and Shoemaker of Mayo Clinic who treated 405 medically and 128 surgically: One year later 48 had not been heard from; 15 cases had had

a resection of the presacral nevre, five had complete relief; four were definitely improved; one was relieved for two months, then had a recurrence of dysmenorrhea; four noted no relief. In the medical group 75 per cent were improved by medical treatment.

Retroversion has long been listed as a causative factor in dysmenorrhea. Twelve cases had a suspension of uterus; four reported complete relief; five partial relief, and three no relief. Dilatation and curettage was done on thirty-six cases of obstruction and stenosis. Five experienced complete relief; fourteen were improved after two years; seventeen reported no benefit at all. Hysterectomy was performed on thirty-seven cases; twelve did not return or reply; eleven were completely well, while fourteen cases still had pain. Therefore, surgery offered no great amount of help.

The number of glandular preparations on the market today and the various literature one receives from the detail men for pharmaceutical houses, makes it rather difficult to know which preparation is most effective in the specific patient under treatment. Therefore, we as general practitioners, must depend on the teaching of the men doing the experimental work in the larger clinics, for the basic principles and substances used in treating the many and varied menstrual disturbances seen in our daily practice.

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Rheumatic Fever

Evidence that the maintenance of certain levels of sulfanilamide in the blood by means of administering small daily doses is effective in preventing hemolytic streptococcic infections and the consequent flare-ups of rheumatic fever in persons known to be subject to recurrences is presented in *The Journal of the American Medical Association* for July 19 by A. F. Coburn, M.D., and L. V. Moore, M.D., New York.

The two authors point out that a previous study had indicated that the maintenance throughout the school year of a certain level of sulfanilamide in the blood protected the children against streptococcic pharyngitis and rheumatic recrudescences. "One factor that it was impossible to control in the New York study," they say, "was the increasing age of the group. Between 1936 and 1939 many of the children passed puberty, and, as is well recognized, rheumatic subjects tend to have fewer recrudescences in adolescence than during childhood. It was therefore possible to regard the increasing age of our patients as largely contributory to the decreasing incidence of rheumatic fever.

"One way of determining whether increasing age was significant in our results was to withdraw sulfanilamide from the patients who received prophylactic doses in the period 1936-1939. This we did during 1939-1940 to a group of 100 patients, mostly adolescents. None of these 100 patients had had streptococcic pharyngitis or manifestations of rheumatic activity while they received sulfanilamide."

REHABILITATION IN WEST VIRGINIA*

By RAYMOND KENNY
Charleston, West Virginia

MANY of you have interested yourselves in helping crippled children for so many years that I should feel presumptuous in talking to you about how it should be done. The country-wide interest in the help of crippled children today is certainly one of the most hopeful characteristics of our society. President Roosevelt has done much to arouse this interest and surely the infantile paralysis epidemic of last autumn, affecting some 650 children in West Virginia, brought the problem tragically close to us all.

Because of the very fact that a crippled child arouses so much sympathy, however, there is danger that the public interest may be spasmodic, recurring only when a specific case is brought forcibly to its attention or when a concerted effort is made to arouse it, as in the case of the birthday balls of recent years. West Virginia is fortunate in that it has had for many years an intelligent group of men and women who have kept alive a consistent and constructive interest in this work. We who are officially connected with the state program are extremely grateful to those persons and organizations, for it is on their efforts that we are now building.

I have but a few minutes, so I will tell you briefly something of the work which your State Department of Public Assistance is doing for crippled children. Since 1929 West Virginia has had a state-wide program for the care of crippled children, and during this eleven and one-half year period, 4,405 children have received state-aid services. Many more, of course, have received medical care through local public welfare agencies for disabling conditions not coming within the scope of the state program.

*Delivered before the Kiwanis Club, Huntington, West Virginia, May 20, 1941.

THE AUTHOR

Mr. Kenny, State Director of Public Assistance for West Virginia; educated at Washington and Lee University; formerly on editorial staff of the Public Health Board of the Rockefeller Foundation, New York; member of Advisory Board of the Arthurdale Community, and was manager of the Federal Social Security Board in northern West Virginia.

In March of 1936 the federal government began to participate and the services have been widened since then. This present year has been an abnormal one in that we were called upon to help in some way 450 children suffering from poliomyelitis and we still have 300 of these under care. We now have 2,018 children receiving active treatment services in hospitals, clinics and by nurses and physical therapists in their own homes.

The procedure under our regulations is fairly simple. There are seven regular clinic centers: Wheeling, Charleston, Huntington, Parkersburg, Martinsburg, Morgantown and Clarksburg. Let us say that a child is referred to the state department from one of these clinics by the doctor in charge, who sends to the state office both the diagnosis and his recommendations for treatment. The case is then approved or disapproved by the state department, the decision depending upon both the diagnosis (the state plan as approved by the federal government requires that children accepted must be suffering from one of several specified disabilities) and the social record of the child. If a child comes to the attention of the county office of our department in some manner other than through a clinic, the application is sent to the state department, the child is assigned to a clinic for diagnosis, and the above procedure is carried out.

There are, as I have pointed out, seven regular clinic centers, but there are also special clinics and in some cities several are held each month. Here in Huntington, for example, there are two regular clinics and one special clinic each month. Thus far this fiscal year, Dr. Scott and Dr. Hutchison have conducted 19 clinics and have made 659 examinations. Dr. Jones conducted nine clinics, making 357 examinations.

Of course, these doctors have also performed many operations in connection with this program, and have attended many non-surgical cases during the period.

Perhaps you would like to know something of the cost of this program. During the past ten months, from the beginning of the fiscal year to May 1, the program cost $182,221. Of this, $150,325 went for treatment, surgery, and appliances. The remainder, $31,896 was for nursing services, transportation and administration costs. Approximately one-third of the funds were from the federal government.

EDUCATIONAL PROGRAM

We also have an educational program for crippled children and it seems to me that this phase of the work should be expanded and strengthened. Perhaps it is here that such organizations as yours can help us most. There are now 13 teachers, 10 of them furnished by WPA, who teach crippled children in 14 hospitals and in the convalescent homes at Morris Memorial at Milton, and The Pines at Berkeley Springs. We try to follow as closely as practicable the public school program and teach handcraft arts as well. Last year, 538 crippled children came under this program. Perhaps one of our greatest needs now is some means of reaching the crippled children who are in their own homes and yet are not able to attend the public schools.

I am quite sincere in saying that there is much which you as laymen can do to help in the state-wide program. You have already proved this. I would like to express my gratitude for the work of the crippled children's societies for the cooperation they have always given the department I am now directing, and express my hope that they will continue to do so. Upon these societies and the service clubs largely depends to what extent we are going to reach all the crippled children who need help. I hope that you will aid in bringing them to our attention. I also hope that you will help in interpreting our program in your communities. In some towns the clubs have provided lunch for the children on clinic days; in many places they have furnished educational supplies. Every Christmas, service clubs in the state bring gifts to the hospitals. For all this we are grateful.

Since I have a feeling that you of the local crippled children's organizations and this Kiwanis Club hear much, much more about crippled children than about crippled adults, and since this meeting is rightly interested in the rehabilitation of persons of all ages, I would like to tell you something about our department's plan for restoring adult persons to health and employability. At present it is a relatively small part of our program, yet we in the new administration are so firmly convinced of its importance that we intend to make its expansion one of our prime objectives.

ADULT REHABILITATION

Under the plan of adult physical rehabilitation our department will undertake to restore to health any physically handicapped adult who is unable to provide the necessary care for himself and whose physical condition indicates the likelihood that he can be restored to employability at a reasonable cost.

I am reluctant, in discussing these phases of our program, to emphasize the financial side of the results obtained, for I am quite sure that the savings in money effected through rehabilitation is but a small part of the actual good accomplished. There are values of human happiness far more important, not only from the standpoint of the individual, but from that of society as well. Yet these latter values are hard to enumerate in any very convincing manner, their in-

tangibility making them less impressive, perhaps, than arguments involving dollars and cents. So let us look, for a moment, at what it means financially when the State of West Virginia rehabilitates a man or woman.

At present some 495 men and women are being treated by our department under this program. (Please do not confuse this with our general medical program, in which we treat many thousands). These men and women are suffering from a variety of ills—hernia, loss of an arm or leg, bad teeth, bad eyes, and the like, and the physicians who examined them decided that they could be restored to employability at a comparatively small cost. Now, experience shows that it will cost on the average about $100 each to give these treatments, perform these operations, and buy the necessary appliances. Experience further shows that about half of these persons will soon return to self-support. For instance, since last July, 131 persons have been rehabilitated in the six counties represented in this area meeting. Sixty-five of these have already returned to employment; others are able to go back to work and are awaiting employment opportunities.

COST OF RELIEF

Let us look a little further. Suppose we had not rehabilitated these persons, but had kept them on the relief rolls instead. The average relief case costs approximately $230 a year—which makes $14,950 for these 65 cases. Their rehabilitation cost but $6,500. This is a saving of $8,450, and please remember that this is allowing for relief grants to these persons for only one year. The chances are, of course, that the time would have been much longer.

The progam of adult physical rehabilitation began in West Virginia under the emergency relief administration when those who received relief were required to work out their grants. Those then in charge of the program soon recognized the fact that many of the men were not able to work and their labor often had disastrous results. Medical examinations disclosed that many of the men were rendered unemployable by some remediable disability. Sometimes this disability meant a slight operation; in others, it was the furnishing of an artificial limb; in still others, it was the purchase of glasses. It was decided to do something about the situation.

Ten unemployed men, ranging from 23 to 60 years of age, were selected for an experiment in rehabilitation. All but one were married and they had anywhere from one to seven dependents. All had some disabling physical handicap. One had a tumor on his elbow, another suffered from infected tonsils and teeth. There was a case of bone infection and several cases of hernia. The men were promptly hospitalized and operations performed. Nine of them went back to work after a reasonable period of convalescence. The most skeptical of observers admitted that the experiment had been a success.

It looked so convincing, indeed, that $10,000 more was allocated to this work. Doctors throughout the state cooperated and 18,000 unemployed men and women reported for medical examinations. Out of this second group, it was found that 7,800 needed some type of medical attention. Around 5,000, the majority of whom had hernias, were in need of immediate care. Six months later it was shown that 82 per cent of the second test group were earning their own way again.

These, then, were the beginnings of adult physical rehabilitation in West Virginia by a public welfare agency. I believe that we have demonstrated that the program is sound economically quite apart from its incalculable value as a means of preserving the morale and social worth of the individuals to whom it has given new hope and new independence. As I have said, the program is still a small one in West Virginia, and it is our intention to see that it becomes a much larger one in the future.

Once again, let me tell you how happy we are to bring our progams for adult physical rehabilitation and crippled children to the sympathetic attention of men like yourselves who, because you are humanitarians and inter-

ested in the advancement and improvement of your fellowman, are, in your capacities as citizens and taxpayers, the very originators of all our endeavors.

Surely these efforts of ours, these efforts of yours and mine, to rehabilitate children and adults who are physically disabled cannot be empty of significance. In this age when a great part of the world is bending every effort toward the destruction of human life, it is perhaps more than ever important that some of us pause to consider seriously the ways and means of restoring human beings to health and usefulness.

MOBILIZING FOR BETTER NUTRITION*

By RUSSELL M. WILDER, M. D.
Rochester, Minnesota

EVIDENCE to be presented to this conference should convince everyone that the nation is faced with a serious problem of malnutrition; that despite a so-called surplus of foods a great many of our people are not receiving the fare they need for strength of mind and body.

The gravity of this situation, however, is not an occasion for crepe-hanging and bemoaning our plight. The hopeful and challenging fact is that we now have the scientific knowledge, the means, and the national will to do something about it.

The national nutrition problem is exceedingly complex however. Its solution depends upon the mobilization of all those sources of knowledge, activity, and good will which can be utilized for the improvement of nutrition for all the people. The various fields of national endeavor represented at this conference give evidence of the total effort we shall have to expend in mobilizing for better nutrition.

Significant studies made by the federal government as long ago as 1936 bear witness that this mobilization comes none too soon. These surveys revealed that in 1936 more than one-third of all families were buying food which could not provide a diet better than "poor" when rated by conservative standards. Not more than one family in four secured food which would provide a diet rated as "good."

THE AUTHOR

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The conclusions drawn from these surveys have not been found acceptable to everyone. There are some persons who do not feel that they apply today. They maintain that times have improved since 1936; average incomes and purchasing powers are higher. Many physicians have been critical of the results set forth on the ground that none of the individuals included in the statistical totals was subjected to personal examination. However, in later studies carried out in villages of North Carolina and Tennessee, in Toronto, and in several other widely separated cities, physicians have made careful examinations of the people, and similar conclusions were reached.

In considering the total problem of nutrition, there has been criticism of the physician as well as by the physician. The scientists who, for 20 years or more, have studied nutrition in animals have indulged quite frequently in caustic comment on the failure of the medical profession to come to grips with malnutrition.

Practicing physicians, by and large, have been slow to act on the developments in the

*Read before the National Nutrition Conference for Defense, May 26-28, 1941, Washington, D. C.

nutrition field. I wish to take this occasion to explain this conservatism.

The past forty years and more have been a period of dramatic achievement in many fields of medical science and of marked success in the control of diseases caused by bacteria and related organisms. The accomplishment of the average physician, in the complexity of human pathology, is highly creditable. Few persons not trained in biology are even dimly conscious of the difficulties involved in the accurate diagnosis of disease.

PREVENTIVE MEDICINE

Nor has the physician failed, except in nutrition, to recognize the predominant significance of preventive medicine. He has given freely of his time to the campaigns which have been waged with marked success against tuberculosis, syphilis, and maternal ill health. His efforts usually have been made on a purely voluntary basis. Most of the legislation to which we owe that magnificent organization headed now by Doctor Parran, the United States Public Health Service, has come about as a result of insistence by physicians. This is equally true of the fine collateral departments of public health in our several states.

The medical profession has not been tardy, as workers in nutrition have sometimes thought, in granting early recognition to the new in science. Salvarsan was introduced in 1910, and by 1912 was in general use for the treatment of syphilis; insulin was discovered in 1921 and by 1923 was employed the world over. The value of the sulfapyridine was recognized in 1938, and patients with pneumonia received its benefit almost immediately.

Fundamental knowledge in the science of nutrition is of very recent origin; in fact, it is still being sought on a dozen research fronts. Many physicians received their academic education before scientific nutrition had accumulated the body of fact which today seems so important. Moreover, the earlier investigations were made in scientific fields whose relation with medicine was not so clearly recognized as it is today. These important contributions were published in journals which the average physician did not read, and hence became embalmed, so to speak, in the scientific literature.

As in the initial years of any new science, the early findings were indeed vague and negative. According to a popular definition, "A vitamin is something that makes you sick if you do not get it." It could scarcely be expected that men trained in a school of tangible causes and effects should be greatly concerned with infirmities for which only a negative causation could be suggested, nor could they find much substance in so vacuous a conception.

DEFICIENCY RECOGNIZED

The average office practice of most physicians and even the wards of hospitals have not revealed much disability clearly related to diet. Most persons who are malnourished are scarcely sick enough to call physicians. If they do, it is for symptoms which the doctor in the past has thought were due to mental or nervous disorders. Doctors long have recognized severe deficiency diseases. Pellagra, when it came full-blown with red, scaly skin on hands and neck, a red, sore tongue and diarrhea, was unmistakable. But, in most places, the number of cases of pellagra has been very small. We encountered dropsy in patients with tender nerves and other symptoms simulating the disease which, in the Orient, is known as beriberi, but such clinical pictures were very rare. Frank scurvy, with its bleeding, swollen gums and skin spotted by blood which oozed into the tissue beneath the skin, likewise has been uncommon. Rickets in children was once terribly apparent, but of late years the general dosing of infants with cod liver oil has decreased the conspicuous features of rickets.

When it came to the recognition of the more subtle forms of malnutrition and their relationship with the vitamins, the physicians were wary. This is entirely understandable, for it must be remembered that diet for centuries has been a fertile field for quackery. Food fads have come and gone by the score.

Physicians are perhaps more conscious of the evils of charlatanism than others without the same training.

Furthermore, the early evidence on vitamins was limited for a long time to what was learned from animal experimentation. Physicians must be careful about accepting for man conclusions based on work with lower forms of life. I beg that what I am recording will not be interpreted as lack of appreciation of work in animal nutrition. Without the basic information thus obtained, the chemists could never have proceeded. My intent is rather to point out that the concept of vtiamin activity seemed to the physician academic, rather than practical. The earlier suggestions in nutrition that this or that vegetable or fruit was an excellent, a fair, or a poor source of this or that ill-defined activity were unconvincing to a profession becoming accustomed to methods of precision both in diagnosis and treatment.

VITAMINS

Thus, physicians demanded other evidence that the newer knowledge of vitamins applied to man. That evidence was forthcoming in the contributions of brilliant chemists who isolated or made available by chemical means, the vitamins in forms which could be tasted, smelled, weighed, and measured for effect.

Additional evidence came from nutritional physiologists, chemists, and clinical investigators. Methods were determined for measuring with precision the amounts of each of the several vitamins contained in foods. Methods of determining the amount of vitamins in blood and urine were likewise established so that diagnosis of vitamin deficiency could be made in the clinical laboratory. Physicians can now think and work in terms of micrograms of vitamins with chemical names. At least this is true for several of the vitamins. The chemical designations of these substances provide a distinct advantage, for the use of alphabetical designations, A, B, C, and so on, created much confusion.

With these tools at hand, physicians have in recent years begun to display the long awaited interest in scientific nutrition. After all, as Director Wilson has remarked, in a dynamic society we cannot demand complete scientific knowledge before acting. "Greater mistakes will be made by waiting for the golden age than by acting on knowledge at hand and changing our course as newly acquired knowledge may suggest."

Another reason for the growing acceptance of nutritional science by physicians is the increasing knowledge of the actual requirement, per person, of each of the several nutrients contained in food. We know today, beyond all doubt, that the average American diet does not provide what men and women ought to have, nor what the children of today need to become vigorous citizens of tomorrow.

In consequence, physicians now are even more concerned than are some of the scientists with the problems of health which malnutrition has created. Specialists in disease of children were first to crystallize their interest, but of late, discussion of some aspect of human nutrition finds a place on the program of nearly every medical gathering in the nation.

The American Medical Association organized a Committee on Foods some fifteen years ago. This body, composed of a group of leading nutritional scientists and a number of physicians, undertook to inform the medical profession and the public concerning the reliability of nutritional claims made in connection with advertising and labeling of foods. This earlier committee more recently has been renamed the Council on Foods and Nutrition. As such, it is concentrating attention on the nutritive qualities of foods in general use and on the effects of various methods of processing, distribution, and preparation on those qualities.

COMMITTEES COOPERATE

When the president called the National Nutrition Conference for Defense, the Council on Foods and Nutrition and the Board of Trustees of the American Medical Association pledged to it their full support. They recognize the need for awakening public interest in the many problems here to be con-

sidered. They appreciate, however, that many kinds of experience are required to solve effectively the diverse problems facing us. Physicians in every community will cooperate in what needs doing, but with them must be ranked many other groups with other special training.

Guidance is demanded from experts in nutrition. To provide this guidance, the Committee on Food and Nutrition of the National Research Council has been organized. The broad policy of this committee, as formulated by its resolutions, is to assist in securing adequate nutrition for the greatest number of people. In what it has done to date, consideration has been given and in the future such consideration will continue to be given both to the nutritional requirements and to the supply of essential nutrients in all foods. Every effort has been and will be made to supply this demand through natural foods, and the committee is emphasizing educational and research projects and other forms of assistance designed to develop methods for the fuller and better utilization of natural foods. However, partly due to emergency conditions which now exist, specific enrichment procedures may need to be recommended. One has already been recommended, namely enrichment of flour and bread. Others will be considered individually, each on its own merits.

FOOD HABITS

Food habits offer difficulties which only experience in psychology and education will overcome. Assistance here can be looked for from the Committee on Food Habits, now organized by the National Research Council.

Economics is importantly involved in any consideration for the improvement of national nutrition. Here the advice of the social economist is essential.

Very many families are unable to secure enough "protective foods." Milk, meat, eggs, fresh vegetables and fruits are relatively expensive. Whole wheat bread and other whole grain cereals are perishable—a factor which adds to the cost of their distribution. The farmer in most cases can keep a cow and have a garden and an orchard; but on some poor lands, this is impossible. The city dweller, however, is always dependent on the market for the variety of foods available to him and for the amounts which his dollar will purchase.

Families with incomes below a certain level must have assistance in tangible form if they are to secure the foods which provide an adequate diet. Assistance may take the form of a money dole, or it may involve the direct distribution of food. Experience has shown that money payments, as a rule, are ineffective. Distribution may be accomplished by means of tokens or stamps, good only for the purchase of food and not interchangeable. The food stamp plan of the Surplus Marketing Association has succeeded amazingly. I was told by a physician in New York that the clinical complexion of the clientele in a large dispensary changed dramatically after the food stamp plan was introduced in that community. Before its adoption, almost every patient was overweight or underweight. (And I may say that overweight is as common a symptom of malnutrition as is underweight). Many of the patients also presented other signs of malnutrition. After the adoption of the stamp plan, the appearance of more than half the patients decidedly improved. Indeed, one of the women patients declared, "Doctor, I'm beginning to live again!"

SCHOOL LUNCH PROGRAM

Another way of supplementing the diets of low income families is to distribute food in kind. This can be done by some arrangement for communal feeding. The school lunch program, so long in operation in this country, has proved its value. Sir John Orr, director of the Rowell Research Institute in Aberdeen and director of the Imperial Bureau of Animal Nutrition, recently wrote from England that when the school day diets of malnourished children were supplemented with milk and other protective foods, their ability to learn markedly improved. In a private school in Connecticut, where malnutrition

had not been conspicuous before, the average grades rose 10 per cent when special attention was given to the nutritional adequacy of the food served.

Similar methods of improving the nutrition of industrial workers have produced encouraging results in Britain, according to Orr. The introduction of supplementary meals in factories has been followed by an increase in production and a marked reduction of accidents.

A method of attack of special value is to improve the nutritional qualities of certain staples, which, because they are inexpensive, form an unduly large proportion of the diets of families with small incomes. It is almost impossible, even for experts, to plan nutritionally good diets costing less than twenty cents a day when the sugar, flour, rice, and edible fats have had most of the minerals and vitamins removed by methods of refining. In some foods, all of these valuable elements have been lost.

FOOD INDUSTRIES

It is here that the several food industries must mobilize. The expedient that is already adopted for flour and bread has been to fortify these staples by the addition of iron and certain of the purified vitamins. It does not represent the ideal solution of the flour-bread problem, but neither in my opinion does any other course available today. Brown bread has never been acceptable to more than a very small number of the population and for many persons the irritative action on the bowel of the bran contained in undermilled flours is undesirable. The miller, in time, will be able to present us with a white flour, so made that it retains most of the vitamins and mineral values of wheat. But, until he learns how to make such a flour, and that will take time, addition to plain white flour of those vitamins which the National Research Council's Committee on Food and Nutrition has prescribed for flour and breads labelled "enriched" will do much to facilitate the planning of good diets.

Many uninformed persons have blamed the food industrialist for our diet problems. The criticisms in large part have been unintelligent and grossly unfair. All modern methods of processing were developed before there was knowledge of vitamins and they have contributed importantly to improving the sanitary quality of foods. They also have provided products with much better cooking qualities. In some processing methods, the vitamins are better preserved; in others, they are lost together with other nutritive essentials. Before altering accepted procedure, the food processor, like the physician, demanded proof that human diets needed changing. Only recently has the evidence convinced him.

Nutritionists have been aware of a shortage in diets of vitamin A, calcium and iron. The natural food sources for these are the green, leafy vegetables, milk and butter. Many people obtain too few of these. Unable to purchase butter, they use in place of butter, either vegetable or animal fats which carry no vitamin A and may be lacking in other nutritional values. Something must be done to improve the nutritive qualities of the vegetable and animal fats, as now distributed. A problem the food industry must face is the need for larger distribution of milk than now obtains. The nutritional inadequacies of sugar create difficulties. Many diets are inadequate in protein. A wider distribution of lean meats and of leguminous proteins such as are contained in the peanut or the soybean would be advantageous.

LEADERSHIP NEEDED

It would not be appropriate here to elaborate further on individual aspects of the problem. I have mentioned some of them only to illustrate that much lies beyond the physician's sphere of activity. Success in the nutritional campaign demands leadership from many groups. The responsibility indeed is shared by all of us. Viewed selfishly, it is as much to my interest as to my neighbor's that he and his children be well nourished, if only for the reason that today all of us need, as never before, the assurance that comes from united strength and well-being.

Fortunately, an army of women, trained in schools of home economics, is already in the field. They have been there for several years, holding the front, so to speak, with almost no support and very little appreciation from the rest of us. The job of feeding the family is not woman's work alone, as men so often have supposed. Responsibility for the health of the family is as much that of the husband as the wife. The county agent, the farm security agent and others in the agricultural service have left too much to the home demonstration people. Encouragement of home gardening and a family supply of milk and poultry is much more the responsibility of the men in these services than has been recognized.

One division of the nutrition army already in the field is composed of dietitians. They are invaluable assistants to physicians. We frequently are unable to devote the necessary time to teaching patients how to put in practice what we prescribe. Dietitians receive excellent training. Their numbers need augmenting to permit their wider employment in maternal and child health centers, in community feeding projects, in dispensaries and as teachers of nutrition in many other situations.

DENTISTS

The dental profession has been creditably active in nutrition, sometimes with greater zeal than wisdom. More emphasis on the fundamentals of nutritional physiology is desirable in schools of dentistry, as it is in schools of medicine. Nurses likewise ought to receive more training than they do in the principles of sound dietetics and nutrition.

The machinery for government regulation of foods was devised to prevent the sale of spoiled, adulterated or misbranded foods. With notable exceptions in certain bureaus of the Department of Agriculture, little attention has been given to the nutritive qualities of human foods. The interest in general has been more in protecting pocketbooks than health. Also unhappily some food legislation has discriminated in favor of special interest groups with large political influence to the detriment of the public at large. Here also criticism must be tempered with appreciation of the fact that proof of damage done has only lately been presented. Our legislators and public administrators are now hearing about nutrition for the first time, and from now on a change in emphasis may be anticipated; more attention to nutritional needs by administrators and by legislators; greater resistance to political pressures that affect unfavorably the nutritional needs of the people.

RESEARCH WORKERS

Last to be named, but foremost in importance, in this army which now is mobilizing on the nutrition front, are the people in research, the pioneers with the courage and what else it takes to scout in advance of the main forces, to locate the enemy and establish outposts. Nutrition is a newcomer in the ranks of science and much remains to be learned about it. Other vitamin activities are yet to be discovered; a number of vitamins await isolation. More knowledge must be had about the chemical mechanisms involved in these activities, about the dependence of one vitamin on another, and about relationships between vitamins and the various salts. A new world awaits exploration.

We are mobilizing now for a military emergency, mobilizing on many fronts. The outcome, if war is prolonged, will be determined in large measure by what we do with our foods.

In summary, I again express my confidence that the physician, aware of the seriousness of the problems presented by nutrition, will cooperate in the campaign for better nutrition with the same zeal he has exhibited in other public health activity. In the application of nutritional knowledge to the treatment of disease, his leadership must be sought and recognized. The overall problem of national nutrition is beyond the physician's immediate sphere of action, but its solution will be the more speedily attained if his sympathetic support becomes an integral part of the program.

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

Findings in an extensive tuberculosis survey in Chicago schools, using the tuberculin test as a screen, are now available. While it is not a new conclusion that routine skin testing in elementary school groups is not an economical procedure, the report does contribute materially to our knowledge of the epidemiology of tuberculosis and permits comparison with previous surveys in the same city.

Tuberculin Testing in Chicago Schools

This survey was carried out by the Chicago Municipal Sanitarium, aided by the Tuberculosis Institute of Chicago and Cook County.

The survey policy of the Municipal Tuberculosis Sanitarium had hitherto been largely oriented toward older groups. Tuberculin testing in the schools, therefore, represented a deviation from established policy and was undertaken in order to explore educational values, morbidity rates, and case finding potentialities of a follow-up of the reactors and to check on existent case finding machinery.

As the purpose was to obtain a cross-section of tuberculosis morbidity, the survey attempted to include every Chicago school. However, it was necessary to sacrifice certain ambitions, such as a 100 per cent consent and a thorough survey of each school. In a general way, the policy ran, "Get what consents you can in the time allotted and go on to the next school."

Kindergarten, first and eighth grade children and all available students in the high schools were examined because a positive reaction in a kindergarten or first grade child might have some epidemiological significance; eighth grade children were on the threshold of adolescence and many would not go to high school. Thus it might be their last chance of inclusion in a case finding effort. In view of the many studies already made, justifiability of high school examination was hardly debatable.

First, the board of education notified the principals. Then the nurse addressed the teachers and children in each room. All were given appropriate literature which, with the consent card, the children took home. After due interval the operating team did the tuberculin test and results were read in forty-eight hours.

In all, 176,878 consents were obtained in 561 public elementary schools, 115 public high schools, 347 parochial elementary schools, 47 parochial high schools, 12 trade and vocational schools and five junior colleges.

A self-contained and complete mobile unit, the first as far as is known to be used in the x-ray field, was devised. On starting work the truck drove into the school yard and the technician selected a location as near as possible to space for extra dressing rooms. Current was obtained through a cable from a school connection.

The procedure, carefully standardized, was to give a single Mantoux test using purified protein derivative in an amount one-tenth the usual final dose. The percentage of reactors with this dose was low compared with the experience in other urban areas so the injection unit was doubled in the latter part of the work, except in the case of Negroes and Mexicans who had shown marked sensitivity to tuberculin.

In the 167,345 children tested, 27,401 proved positive. To March 1, 1940, 23,532 had been x-rayed and 218 cases of reinfection type tuberculosis were found of whom 109, or 50 per cent, were in the moderately or far advanced stage; in 4,524 children, evidence of primary infection type tuberculosis was found.

The reactor rate and the primary tuberculosis rate was practically the same for boys and girls but the incidence of reinfection type tuberculosis was twice as high in girls. The incidence of disease among children x-rayed was higher in Negroes and Mexicans but not to the same degree as the infection rate. The Negro children had slightly less primary tuberculosis than the white.

The study seemed to bear out the reports of other workers who found a lack of constant correlation between tuberculin sensitivity and tuberculous calcifications.

In comparison with other metropolitan surveys, the reaction incidence in Chicago is low. This may be due to the fact that no open case may live in the same home with children under sixteen. Contact is broken as soon as possible after discovery of the case.

Survey results confined to a district or a constellation of districts would lead to false conclusions. The survey included schools in every district and children from every economic level. The major part of the tuberculosis problem is sharply localized. About four of the 75 census districts account for

38 per cent of the deaths. Mortality in these areas is much higher than the general rate, namely, 196 per 100,000 as compared to 51.6 per 100,000 for the city as a whole. Morbidity figures run low in the same ratio.

In Chicago, as elsewhere, decreasing mortality rates probably exerted influence on the composition of the infection index. The rate has fallen from 147.9 per 100,000 in 1917 to 51.6 per 100,000 in 1939. Over the same period, the rate has fallen from 133.9 to 34.0 for whites and from 414.0 to 281.7 for Negroes, per 100,000.

In an attempt to estimate the diminution of the reactor rate the present figures may be compared to older studies, one made by Webb of the University of Chicago in 1930-1931, the other by Novak and Kruglick of the Tuberculosis Institute of Chicago and Cook County in 1933-1937. Webb tested no high school children and Novak and Kruglick tested no elementary school children. In elementary school ages, comparing Webb's figures with the present study, since 1930-1931 there has been a definite drop for each age period. Comparing high school tests for 1933-1937 and 1936-1939, there is also a substantial drop for each age period, except for age twenty; only 29 students of this age were tested in the Novak study.

The specific relation between tuberculin positives and tuberculosis in the home was clearly demonstrated in the present survey. The source of infection was unmistakably established in 3,284 instances but of these only 226 were new pulmonary cases.

The comparatively small number of new cases found in the families of the positive reactors was both a disappointment and a satisfaction. A larger proportion of new tuberculosis had been anticipated but it was encouraging to know that the existent case finding machinery was effective, since in 90 per cent of the cases the source of infection was already under supervision.

Altogether, 586 new cases of tuberculosis were found. The total cost chargeable to the survey for the 586 cases found was $511.95 per case.

In order to explore its potentialities, figuratively speaking, the miniature x-ray was carried almost to the doorstep of the people in the congested areas. The equipment was hooked up to the mobile x-ray truck and this self-contained unit, including dressing rooms, was taken to various locations.

The plan, still operative, aims to make an x-ray examination of every man, woman and child in certain areas of gross congestion, high tuberculosis mortality and low economic status.

In the school survey, lasting three years and comprising 23,532 x-ray examinations, 218 new cases were found on the first film. In the miniature x-ray survey comprising 20,956 examinations and lasting five months, 675 new cases were found by the original x-ray.

Summary

During the three-year period, 167,345 children were tuberculin tested and 23,532 x-rayed. The reactor incidence was 7.04 per cent for kindergarten and first grade, 19.82 per cent for eighth grade, 21.29 per cent for high school students and 29.97 per cent for miscellaneous schools and colleges. The rate for Negroes was twice that of whites and for Mexicans it was still higher.

This study shows a substantial drop in the reactor rate in Chicago as compared with older studies. The city-wide survey emphasized the fact that each district had its own reactor rate which was allied to local mortality rates.

Of 57,481 children under twelve tested with tuberculin, nine cases of pulmonary disease were found, which is comparable to figures for this age group in the mortality tables. Facts point toward the adolescent and early adult years as the case finding provinces. In testing adults in highly infected milieus (60 per cent reactions or more) x-ray of the entire group is cheaper than tuberculin testing with x-ray of the positives.

Bulletin, Chicago Municipal Sanitarium, Vols. 18-19-20, *Years* 1938-39-40, 1-12, *inc.*

Sensitivity to Vitamin B1

An instance of acquired sensitivity to thiamine hydrochloride or vitamin B1 is reported in *The Journal of the A.M.A.* for July 19 by Clarence L. Laws, M.D., Atlanta, Ga., who advises skin tests of patients before administering it.

He says that a white married woman of 72, with no previous allergic symptoms, was advised by her physician in September, 1940, to take thiamine hydrochloride subcutaneously each day for ten days. At the expiration of the ten days the interval between injections was increased to seven days and eight more injections were given. She was advised to discontinue medication. The patient felt so well that she consulted a physician in a different city and discussed the possibility of continuing thiamine. He acquiesced and gave her eight or ten weekly injections.

President's Page

We have just read with a great deal of interest the report of Dr. Arthur W. Booth, chairman of the Board of Trustees of the American Medical Association, which was made before an executive session of the A.M.A. House of Delegates at Cleveland on June 3, 1941, covering the indictment and trial of the American Medical Association, et als. As most of you know, the case began with the indictment of the American Medical Association on December 20, 1938 and was concluded after a two months' trial on April 4, 1941, when the jury found the American Medical Association and the Medical Society of the District of Columbia guilty of the charges in the indictment, and acquitted all of the remaining defendants.

It is interesting to note that during the course of the trial the Court refused to permit the American Medical Association to prove that Group Health Association, a membership corporation not for profit, organized under the laws of District of Columbia, received a subsidy of $40,000 from the Home Owners Loan Corporation and received additional subsidies from private sources. The Court also would not allow the American Medical Association to prove coercion to require employees of various government departments to join Group Health Association; nor would the Court give the American Medical Association an opportunity to prove that Group Health Association was guilty of advertising for and soliciting members.

There were many points of vital concern to every practicing physician that were never touched upon in the A.M.A. trial. For example, the defendants, according to Dr. Booth, were not allowed to show that Group Health Association was illegally practicing medicine and was engaged in the operation of an insurance company contrary to law. Neither was the A.M.A. allowed to show that Group Health Association and the doctors employed by it were violating the Principles of Medical Ethics of the medical profession. In refusing permission to bring out these points, the Court pointed out that even if Group Health Association were violating the law, that fact would not authorize the defendants' violating the law in an effort to restrain Group Health Association.

As Dr. Booth points out, new and novel questions of law are involved in this case. He stated in his report that there is a fair chance that the Court of Appeals of the District of Columbia will decide that the District Court committed a reversible error in many of its rulings on the evidence, in refusing to permit the defendants to make proof as above stated, in denying motions by the defendants to direct a verdict in their favor, in certain instructions to the jury, and in denying the motion of the defendants to set aside the verdict of the jury finding the two corporations guilty, when the jury had found all the alleged agents of the corporations not guilty. In any event, the case will be carried by the A.M.A. to the Supreme Court of the United States before it is finally settled. It is interesting to note that the motion to appeal the case to the United States Supreme Court was carried in the A.M.A. House of Delegates without one dissenting vote.

Here is one fine example of the medical profession sticking together. We may quarrel among ourselves over one thing or another, but just let an outsider step in and start a fight and we will all generally be found pulling together.

Robt. C. Burford

President.

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POLIOMYELITIS RESEARCH

Last year in southern West Virginia the incidence of poliomyelitis reached epidemic proportions, and the season is with us again when we may expect an increase in the number of cases of this disease. Much is known about poliomyelitis, but much remains either uncertain or unknown. Extensive research is being carried on in an effort to clarify the doubtful phases of the problem. In order to conduct successful research, autopsy material must be had, and the cooperation of the practicing physician with the research worker in securing this material is imperative.

Dr. Howard Howe, Department of Anatomy, Johns Hopkins Hospital, Baltimore, would like very much to obtain material from an early case of poliomyelitis in which the patient died from something other than poliomyelitis, such as accident, dysentery, or other unusual complications. Dr. Howe may be reached by telephone or telegram collect at the above address. His work is of a very important nature and much would probably be added to our fundamental knowledge of acute poliomyelitis, if such situation might arise and Dr. Howe could obtain the material. He would come at once to perform the autopsy himself. He is deeply grateful for the cooperation afforded him by West Virginia physicians and public health workers in the epidemic of 1940. This cooperation has made possible his extremely important and history-making researches.

Dr. Albert B. Sabin of The Children's Hospital Research Foundation, Cincinnati, is in need of human necropsy material in cases of poliomyelitis, and in fatal cases when autopsy permit is secured he would appreciate the opportunity to perform the autopsy. He may be called by telephone collect under such circumstances. One interesting feature of Dr. Sabin's work this year is the trapping of flies in the vicinity of poliomyelitis cases and searching for the virus in them.

Dr. John A. Toomey, chief of the Division of Contagious Diseases, City Hospital, Cleveland, is investigating the spread of infantile paralysis by way of the gastro-intestinal tract. He has been able to recover the virus from the sympathetic nervous system in two instances and from the parasympathetic (vagus) in one. He is very anxious to secure specimens of the coeliac ganglion and connections, and a comparable amount of the vagus nerve, each specimen in a separate jar of 50 per cent glycerol. If an autopsy is to be done on a body dead from poliomyelitis, Dr. Toomey will be glad to send a pathologist to perform the necropsy and collect the specimens. He may, under such circumstances, be contacted by telegraph collect.

Each of these gentlemen is an outstanding research worker intensely interested in the solution of the "polio problem" and we bespeak for them such aid as the profession of West Virginia can give.

CORONARY THROMBOSIS IN YOUTH

While we are accustomed to thinking of coronary thrombosis as essentially a disease of advanced years, it is at times seen in early adult life. Dean MacDonald, M.D., St. Catherine's, Ontario, reports in the *Journal of the American Medical Association* for June 28, a case in a youth of 21. The diagnosis was proven by the autopsy findings.

Dr. MacDonald says: "The case was instructive because the condition was repeated twice and proved fatal. The third and fatal

attack occurred ten and a half months after the first, when the patient was 22 years of age. The pain was relieved by vasodilators and the pain of the third attack was indistinguishable from that of cholelithiasis. Such a condition should always be considered, even in young persons. The law of averages may prove that coronary thrombosis is not common under the ages of 30 to 35 years, but this does not prove that it cannot occur. I have had intimate knowledge of this condition because at the age of 29 I was a victim, as determined by the present reliable clinical and laboratory criteria, and I know of three other cases, one of which was fatal, occurring in the twenties."

OSTEOPATHS AS INTERNES

The Bureau of Legal Medicine and Legislation of the American Medical Association advises that the Senate Committee on Appropriations, in reporting the Army appropriations bill (H. R. 4965) to the Senate, recommended that the authorization for the employment of osteopaths as internes be eliminated.

The committee gives the following reasons for its action:

"(1) The War Department maintains a high standard for its medical officers. They must be graduates of schools which have the sanction of the committee on medical education and licensure (Council on Medical Education and Hospitals) of the American Medical Association.

"(2) None of the schools of osteopathy have applied to this committee for inclusion in the list of standard medical schools. Therefore, all of the schools of osteopathy are now substandard as far as medical education is concerned."

If the Senate in acting on this bill follows the recommendations of the Committee on Appropriations, H. R. 4965 will, if the normal procedure is followed, be considered further by a joint conference committee composed of conferees of the House and of the Senate in an effort to adjust the differences in the bill as it passed the House and Senate. This conference committee may agree to eliminate or retain the osteopathic provision. After an agreement is reached, the conference report must be acted on by the House and Senate.

H. R. 4476 is still pending in the House with a favorable committee report. This bill represents permanent legislation and contains the same provision authorizing the employment of osteopaths as internes in the Army. At one time this was on the consent calendar of the House where action on it could be obtained only by unanimous consent. One objection could prevent the passage of the bill. Information has reached us that the bill has been withdrawn from the consent calendar and has been placed on the union calendar where bills can be considered in the House only after a special rule has been obtained from the Committee on Rules.

The final outcome of this legislation probably depends upon the efforts individual members of the medical profession exert upon their own congressmen.

MEMBERSHIP STATUS

Today, defense preparations color our every thought, word and action. We are planning to discuss the membership status of the Association here, but must preface our remarks with a statement concerning members who have been called to duty in the Army and Navy Medical Corps, in preparation for defense. On our roster we count seventy-two members in military service. There probably are others about whom we have not yet received reports. Before another six months pass, it is thought that a good many more doctors will leave our ranks.

There are fifty-nine new members listed on our roster for this year and several doctors who have transferred to this Association.

The membership of the Association shows a record of 62 delinquent members. Ten of the county medical societies are 100 per cent paid up, namely, Boone, Brooke, Doddridge, Marion, Mercer, Monongalia, Potomac

Valley, Summers, Taylor, and Wyoming. This represents a third of the component societies. Most of the remaining societies would be in this class except for one, two, or three members. Perhaps, these members, marked unpaid on our roster, have gone into military service, and in that event, those counties are also 100 per cent. In our fall check-up we hope to have them cleared up or explained.

That the great body of physicians in this country continue to be a well-run and closely knit organization, is one of the safeguards of our defense. We are many and our influence is far-reaching.

BECKLEY MEETING

It was announced last month in the Journal that the Sixth Councillor District of the West Virginia State Medical Association would meet jointly with the West Virginia Tuberculosis Association at Beckley, West Virginia, on September 17, 1941. The hosts will be the Raleigh County Medical Society and the staff members of the Pinecrest Sanatorium. A complete list of the participants for the symposium on tuberculosis will appear in the September issue.

This meeting is planned in order that a better understanding of programs and policies of the participating groups may result; in order that the private practitioners may be better informed about tuberculosis control measures, and relationship among private practitioners, semi-public agencies, and the public be improved, and thus create still better care for the victims of tuberculosis.

The private practitioner has his viewpoint; the physicians working in the sanatoria have theirs, and likewise the workers in the West Virginia Tuberculosis Association have their viewpoint. In such a meeting as this, if all are disposed to present and discuss each angle, much can be accomplished to clarify the existing questions, with the happy result of stimulating greater progress in the control of tuberculosis in West Virginia.

We feel that district councillor meetings throughout the state, no matter what scientific, economic or social occasion calls them together, are much to be desired, and trust this September joint meeting will set a precedent for many more.

Obituaries

Doctor D. R. Carden

Dr. David Rippetoe Carden died July 6 at St. Mary's Hospital in Huntington. Dr. Carden was born in Nicholas county, July 28, 1869, and received his preliminary education in the public schools of his home county. Afterwards he graduated from Summersville Normal School. He secured his professional education at the Kentucky School of Medicine, Louisville, where he received the M. D. degree in 1898. Thereafter, he entered practice at Zela in his home county of Nicholas where he maintained a very active practice until his hearing became poor and his general health failed in 1924, when he retired and moved to Huntington. Since then he had not attempted any active work.

Dr. Carden is survived by his widow, five sons, Howard, of Lincoln, Nebraska; Harold of Lee Hall, Virginia; Bud and Arch of Prenter, West Virginia, and Paul of Huntington, and two daughters, Louise and Ruth of Huntington.

Doctor Walter S. Gilmer

Dr. Walter S. Gilmer of Henlawson, West Virginia, died at Roanoke, Virginia on June 8, 1941. He was born in 1885 and graduated from the University College of Medicine at Richmond in 1910. Dr. Gilmer was a member of the West Virginia State Medical Association since 1918 and specialized in pediatrics. Early this year he was located in New York City, taking postgraduate work.

Defense Spending

Defense spending in West Virginia made from the initial 17 billion dollars formally accounted for as of June 30, 1941, totals 86 million dollars. Among the 48 states, West Virginia stands thirty-first in volume.

TWENTY-FIVE YEARS AGO

From the August, 1916, Journal

Dr. S. L. Jepson, state commissioner of health, read a paper at the annual meeting of the Association entitled "The Value of Morbidity and Vital Statistics." An extract: "It is surprising but only eight states have anything like a correct registration of births. In our own state, although it is the legal duty of physicians to report their cases of birth and the law provides a fee for the report, we must depend largely on the assessors to collect the births, and by this method the result can never be accurate. * * * To be of value the full name, the accurate date, the names, residence and nationality of the parents should be given. If stillborn, the cause should be stated. * * *

"I may add, that within a month three applications have been received at the health department office for transcripts of birth records wanted for important purposes, and in not a single case could the desired information be given. * * *

"I therefore kindly but earnestly urge the physicians of the state to report the births and the communicable diseases, as the law requires, and to write for the undertaker a proper certificate of death in every case in which death has resulted, being careful to avoid such meaningless terms as 'complications', 'stomach disease', 'unknown', etc., trying at all times to make as accurate diagnosis as possible." (Editor's Note: No doubt the Division of Vital Statistics, twenty-five years later, is still making this plea for greater cooperation and stricter attention to the recording of births and deaths.)

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Dr. A. H. Grigg, president of the Raleigh County Medical Society, presented a paper on "Bronchial Asthma."

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Transactions of the Forty-fourth Annual Session of the West Virginia State Medical Association, Wheeling, May 16, 17, 18, 1916:

Dr. Charles A. Wingerter extended to the Association a hearty welcome on behalf of the Ohio County Medical Society.

The scientific program was opened by Dr. W. W. Brown, Shenandoah Junction, by a paper entitled, "Long Life and How to Obtain It." A plea for mothers was the next paper delivered by Dr. E. H. Thompson, Bluefield, and discussed by Drs. H. W. Daniels, Elkins; W. F. Braasch, Rochester; O. H. Hoffman, Thomas; A. B. Bonar, Moundsville. "Professional Efficiency vs. Professional Inertia" by Dr. C. O. Henry of Fairmont then claimed the attention of the Association.

In opening the afternoon session, Dr. W. F. Braasch, Rochester, presented his paper on "Clinical Data on Nephrolethiasis." This paper was discussed by Drs. Cannaday, Pepper and Hupp. "Methods and Results in Surgery of the Stomach and Intestines", by George W. Crile, Cleveland, was next.

Dr. Robert J. Reed, Wheeling, then gave his paper on "Intestinal Tumors."

Dr. A. Arkin of Morgantown was next with a paper on "Chemotherapy With Special Reference to the Tuberculocidal Action of Arsenic Compounds." Dr. S. L. Cherry, Clarksburg, read a paper on "Pyelitis", and Dr. Pepper of Huntington gave a treatise on "Roentgen Diagnosis of Gastroenteric Lesions."

At the night session, Dr. Frank S. Mathews of New York delivered an oration on surgery, choosing as his subject, "Stones in the Gall-bladder. President Butt was then introduced by the secretary and gave an address full of able counsel which should be read and reread by every member when published in the JOURNAL.

On Wednesday morning, May 17, the oration on medicine was delivered by Dr. J. T. Thornton of Wheeling. His subject was "Diagnosis and Treatment of Chronic Nephritis."

Then followed a symposium upon "Tuberculosis", lead by Drs. E. E. Cloves of Terra Alta and Everett E. Watson of Salem, Virginia. Dr. Watson said tuberculosis was the most prevalent, possessed the greatest mortality, and was the most curable of all chronic diseases. Dr. O'Grady of Charleston spoke of the dangers of exercise and of tuberculin in treating tubercular patients.

In the afternoon the following papers were presented: "Erysipelas with Special Reference to Its Specific Treatment", by Dr. O. H. Hoffman of Thomas; "Aggravated Coryza — So-called Grippe", by Dr. G. A. Aschman of Wheeling; "Use of Urethrascope in Treatment of Deep Lesions of Male Urethra", by Dr. O. D. Barker, Parkersburg; "Pellagra", by Dr. Chas. A. Barlow of Spencer; "Position of Placenta in Utero", by Dr. H. G. Steele, Bluefield; "Causes and Treatment of Arteriosclerosis", by Chas. O'Grady of Charleston.

In the evening, Dr. A. W. Freeman, the official representative of the office of the United States Surgeon General delivered a public address.

On Thursday, the program was opened by a paper on "The Present Status Treatment of Bladder Tumors", by Dr. J. T. Geraghty of Baltimore. Dr. J. Edward Burns of Baltimore next gave a paper on "Thorium; a New Agent for Pyelography." Dr. W. Wayne Babcock of Philadelphia gave a masterly exposition on "Spina Bifida and Its Surgical Treatment."

Dr. Lewellyn F. Barker of Baltimore opened the afternoon session with "Advances in the Study of Syphilis."

Dr. X. O. Werder of Pittsburgh closed the scientific program of the 1916 session with a paper on "Ectopic Gestation with Special Reference to Treatment."

In the evening at eight o'clock the Association gathered at a banquet given by the Ohio County Medical Society to the visitors. There were one hundred and twenty-five members present. Dr. G. A. Aschman was toastmaster. Dr. Jepson, Mr. A. W. Paull, Hon. W. P. Hubbard, Dr. J. E. Rader, president-elect; Dr. J. Howard Anderson, secretary; Dr. J. Shelton Horsley, and Dr. C. S. Hoffman were the speakers for the evening.

* * * *

STATE NEWS

Dr. H. H. Haynes of Clarksburg, has returned from a hunting trip in the Rockies. He bagged six grizzlies and a mountain lion.

Male Sterility

The commonly held view that sympathectomy produces sterility in the male, according to Geza de Takats, M.D., and Loring S. Helfrich, M.D., Chicago, in *The Journal of the American Medical Association* for July 5, is contradicted by a case in which they report that spermatozoa were found after nerve operations.

Several sympathectomies were performed in their case because of circulatory disturbances, pain and ulceration of the toes, blueness and coldness of the toes and fingers, dizzy spells and nervousness.

While a single case, they point out, is insufficient to settle the question of male sterility after sympathectomy, it shows that sterility does not have to occur as a result of this operation.

General News

Health Department Examinations to be Held

Mr. Carl M. Frasure, supervisor of the State Merit System Council, has announced that examinations will shortly be given for the following positions in the West Virginia State Health Department:

Chief of medical services, $325 to $400; ophthalmologist, $275 to $350; director of county health work, $350 to $400; director, maternal and child hygiene, $350 to $400; director, communicable diseases, $350 to $400; director, vital statistics, $350 to $400; director, industrial hygiene, $350 to $400; assistant director, maternal and child hygiene, $320 to $375; assistant director, communicable diseases (venereal), $320 to $375; assistant director, tuberculosis, $320 to $375; venereal disease consultant, $320 to $375; senior health officer, $320 to $375; junior health officer, $280 to $320; health officer trainee, $200.

Residence in West Virginia has been waived in consideration of the applications for these positions. However, residents of this state may be given preference in making appointments. Complete information may be obtained by writing directly to Mr. Frasure, Box 873, Morgantown, W. Va.

Dr. Sheppe in Service

Dr. William M. Sheppe, of Wheeling, a member of the Publication Committee of the JOURNAL, was called to active duty with the armed forces July 15. Dr. Sheppe, who is a commander in the Medical Corps, U. S. Naval Reserve, is the ranking naval medical reserve officer in West Virginia. He is stationed at the Naval Hospital, at the Marine Base, Quantico, Va. Commander Sheppe will, for the present at least, continue his work on the Publication Committee. Dr. Sheppe is assigned to duty as chief of the medical service in the hospital.

Military Surgeons' Meeting

The fiftieth anniversary meeting of the Association of Military Surgeons of the United States will be held at the Brown Hotel, Louisville, Kentucky, October 29 to November 1, inclusive. In addition to their usual program of military medicine and surgery, as it is related to the armed forces of the country, there will be important discussions relating

to medical defense as it affects the profession as a whole.

This meeting should be of particular interest to our Preparedness Committee as in the general program there will be discussion of vitally important aspects of medical defense. Information regarding the meeting can be secured from the chairman, Col. A. T. McCormack, 620 S. 3rd St., Louisville, Ky.

Dr. McCuskey Entertains Council

On the evening of Monday, July 7, Dr. William C. D. McCuskey of Wheeling, gave a dinner at the Fort Henry Club honoring the members of the Public Health Council, which was in session at that time in Wheeling.

Covers were placed for thirty. In addition to members of the Public Health Council, a group of Wheeling physicians and surgeons were present as guests.

The members of the Council present were: Dr. Walter E. Vest, Huntington, president; Dr. C. F. McClintic, Charleston, secretary; Dr. A. H. Hoge, Bluefield; Dr. W. P. Bittinger, Summerlee; Dr. Ben H. Swint, Charleston; Dr. M. T. Morrison, Sutton; Dr. N. A. Baker, Charleston, and Dr. W. C. D. McCuskey, Wheeling.

An Unusual Incident

Among the applicants for license by reciprocity at the July meeting of the Public Health Council in Wheeling was Walter E. Vest, Jr., son of the president of the Council. Certificates of licensure are signed by both the president and the secretary of the Council. As far as is known, this is the first instance in West Virginia in which a father has signed his own son's license to practice medicine. In fact no other such occurrence in the United States is known to the licensing body of this state, but it is hardly probable that this is the first such incident in the history of American medicine.

Wilkinson-Crews

On the evening of July 2, at Cherry Lawn, the home of Dr. and Mrs. Robert Johnson Wilkinson, near Huntington, their only daughter, Elizabeth Traylor, was married to Dr. Howard Ross Crews, of Pineville, West Virginia. Dr. Armand L. Currie, of the First Presbyterian Church, Huntington, officiated.

Mrs. Crews received her early schooling in Huntington, and was graduated from Arlington Hall at Washington, D. C., in the spring of 1938. She is a member of the Junior League, and is prominent in the younger society circles in Huntington.

Dr. Crews was educated at West Virginia University, where he received his B. S. degree, and was a member of the Alpha Epsilon Delta premedical fraternity. He received his M. D. degree as a member of the class of 1940 at Tulane University Medical School, New Orleans, and for the past year has been serving an interneship at the Chesapeake and Ohio Hospital in Huntington.

1942 Convention Date

Dr. Andrew E. Amick, chairman of the Program Committee for next year, announced that the dates of July 13, 14, 15, 1942, have been selected for our seventy-fifth annual meeting at White Sulphur Springs, West Virginia.

The annual meeting of the American Medical Association will be held the week of June 8-12, 1942, and since the only other available dates at White Sulphur were June 15-17, the program committee was of the opinion that this would follow much too closely the session of the A.M.A. The rate will be $9.00 per day per person, which is a lower rate than any other month.

Eighth Institute on Public Health Education

For the eighth time, the American Public Health Association offers a short, intensive course in the philosophy, principles and methods of educating the public for health.

The Institute begins on Sunday, October 12 at Atlantic City, N. J., and continues to Tuesday noon, October 14. The sessions of the seventieth annual meeting of the association start on the fourteenth and end on October 17. It is hoped that all who attend the Institute will remain for the equally important meetings of the health education section and the other nine sections of the association.

Physicians are cordially invited to enroll for the Institute now. Its chairman, Professor Ira V. Hiscock, reserves the right to close the registration at his discretion.

International College of Surgeons

Pan-American unity in surgery as well as in hemispheric defense will be dramatically demonstrated when the International College of Surgeons holds its fourth international assembly in Mexico City, August 10 to 14, upon the invitation of the Mexican government.

Surgeons from most of the countries of the western hemisphere and also England, Holland, Palestine, Portugal, Switzerland and Turkey will participate. Many of the Pan-American countries are sending official representatives. Sessions will be conducted in both English and Spanish.

More than 120 speakers will describe the latest advances in surgery of their particular countries. Especially emphasized will be military surgery and the lessons already learned from the Spanish Civil War, current British campaigns, and civilian experiences during air raids. There will also be numerous exhibits of recent surgical research, operative clinics at many hospitals, and demonstrations by leading manufacturers of newly developed equipment. Headquarters are at the Hotel Reforma.

Among the lecturers will be Dr. Francisco Castillo Najera, Mexican ambassador to the United States; Dr. Fred H. Albee, New York, international president of the college; Dr. Manuel A. Manzanilla, Mexico City, president of the Mexican Committee of Organization; Dr. Desiderio Roman, Philadelphia, president of the United States chapter, and Dr. Max Thorek, Chicago, international secretary.

Pictures of Past Presidents

The Woman's Auxiliary to the West Virginia State Medical Association has been carrying on an intensive compaign for the collection of pictures and biographies of all past presidents of the Association, since its beginning. Mrs. Ralph Hogshead, Montgomery, historian for the State Auxiliary, reports that there are only three more doctors whose pictures are needed to complete the collection, namely: Dr. James M. Lazell, Fairmont, president, 1872, at age of 48; Dr. Silas Warwick Hall, Weston, president, 1874, at age of 49; Dr. Matthew Campbell, Parkersburg, president, 1875, at age of 56.

If any reader knows where a picture of any of these doctors can be found, or knows of a contact which might lead to the acquisition of a picture, the JOURNAL and the Auxiliary will be very grateful for a communication from him. Next year will see the celebration of the seventy-fifth anniversary of the founding of the West Virginia State Medical Association and it is the plan of the Auxiliary to compile and publish a memorial and historical booklet, including pictures and biographies of all of our past presidents.

Southern Medical Meeting

The annual meeting of the Southern Medical Association will be held in St. Louis on Monday, Tuesday, Wednesday, Thursday and Friday, November 10-14. The program will open at noon Monday. The registration will begin at that hour and the scientific programs will begin at two p. m. that day. The general session, open to the public, will be held on Monday evening; the general session for the address of welcome, the president's address and the report of the council, followed by the president's reception and ball will be held on Tuesday evening. The alumni reunion dinners will be held on Wednesday evening. The date of the fraternity luncheons has not yet been announced. All the evening activities will be held at the Jefferson Hotel. The clinical sessions will continue until Friday.

Mr. C. P. Loranz, secretary-manager of the Southern Medical Association, Empire Building, Birmingham, Alabama, is in general charge of all arrangements. Dr. Paul H. Ringer, of Asheville, N. C., president, will preside. Dr. M. Pinson Neal of Columbia, Mo., president-elect will be inducted into office at the close of the meeting.

Symposium on Industrial Health

On September 11 and 12, 1941, there will be a symposium on Industrial Health at the Medical College of Virginia. The program will be opened on Thursday morning by Dr. Walter B. Martin, president of the Medical Society of Virginia. Other speakers will be Dr. J. B. Porterfield, State Bureau of Industrial Hygiene; Dr. E. C. Harper, tuberculosis control officer; Dr. Russell R. Jones, Pittsburgh; Dr. W. J. McConnell, New York; Dr. Louis Schwartz, National Institute of Health; Dr. Harry B. Stone, Roanoke; Dr. George H. Cross, Chester, Pa.; Dr. Rudolph C. Thomason, Richmond; Dr. C. N. Scott, Nitro, West Virginia; Dr. Philip Drinker, Harvard University; Dr. John H. Foulger, Wilmington; Dr. T. Lyle Hazlett, University of Pittsburgh; Dr. H. Page Mauck, Med-

ical College of Virginia, Professor of Clinical Orthopedic Surgery; Dr. Murray B. Ferderber, University of Pittsburgh; Dr. Donald E. Cummings, University of Colorado; Dr. Thomas Beath, Medical College of Virginia; Dr. Henry C. Marble, Boston, and Dr. Sumner L. Koch, Northwestern University.

Programs will be mailed to the medical men of West Virginia within the next week or ten days by the Medical College of Virginia.

Licenses Issued

At the July state board examinations, nineteen doctors were examined. All of the grades are not yet in, so that the JOURNAL cannot publish the names of the licensed doctors until September.

A large number of doctors received licenses in West Virginia by reciprocity. Their names and locations are:

Drs. John Minitree Anderson, Gary; Glenn Ashworth, Fairmont; Curtis P. Artz, Grantsville; William Perry Baker, Morgantown; George Eames Berrian, Holden; Charles Frederic Dent, Morgantown; Robert S. Gatherum, Jr., Athens; Philip Weyforth Keister, Raysal.

Drs. Jules I. Klein, Morgantown; Edgar W. Mahan, Wheeling; William Dennis McClung, Richwood; Lyle Alfred Moser, Minden; Lewis Earl Nolan, Montgomery; Robert Allen Nutter, Enterprise; Morris Hill O'Dell, South Charleston; David W. Palmer, Wheeling; Earl Masters Peck, Logan; James Keith Pickens, Oak Hill.

Drs. Reuben Rubisoff, Logan; Clark Kendall Sleeth, Morgantown; Wilkin Richard Stevens, Northfork; Walter Edward Vest, Jr., Huntington; Joseph Clifton Wiggins, Huntington; Lynwood Duane Zinn, Clarksburg.

The following doctors were granted temporary permits to practice in West Virginia:

Drs. Nelson Singer, Alum Creek; Michael J. Pronko, McKendree; John Edwin Lutz, Charleston; Herbert Nathan Shanes, Coalwood; Carl Bemis Hall, Red Jacket; Frederick Kosanovic, Weirton; Townsend Garfield Lowe, Montgomery; William A. Rose, Sharples; Cyril Patrick O'Boyle, Elkins.

The West Virginia State Nurses' Association is undertaking to institute routine x-raying each year among hospital personnel throughout West Virginia.

County Society News

Cabell County

The annual golf outing of the Cabell County Medical Society was held on the afternoon of Thursday, July 10, at the Guyan Golf and Country Club. The lawyers and dentists of Cabell county also participated. Appropriate prizes and entertainment were offered and a steak dinner was served in the evening.

Dr. Wm. W. Strange is stationed at the Norfolk Naval Hospital, Portsmouth, Virginia.

Dr. R. S. Van Metre of Huntington is now located at 602 Locust Street, Hattiesburg, Miss.

COLE D. GENGE, *Secretary*.

Central West Virginia

The Central West Virginia Medical Society held its regular meeting at Bergoo, July 17, 1941.

A very interesting program was presented by Major Luther R. Lambert, M. C., dealing with the medical service program for West Virginia. There were numerous questions and discussion.

The attention of the society was called to the availability of group physicians liability policy with Aetna Casualty Life Insurance Company.

The name of Doctor Worth Foreman of Buckhannon was presented to the board of censors for membership by Doctor Deeds.

The next meeting is to be held at Buckhannon during the month of October. The arrangement committee consists of Drs. J. C. Huffman, I. F. Hartman, J. C. Rusmisell and L. W. Deeds.

A. B. BOWYER, *Secretary*.

Fayette County

The Fayette County Medical Society and the Woman's Auxiliary held a joint meeting with a banquet at the White Oak Country Club, Oak Hill, on June 10, 1941.

Dr. Sidney S. Negus, Richmond, Virginia, with the subject "Pseudo-Chemistry in Medicine", entertained with a highly amusing "debunking" act of various medical and dietary fads.

About sixty members and guests were present at the meeting. G. A. DANIEL, *Secretary*.

Kanawha County

The midsummer outing of the Kanawha Medical Society was held at the Kanawha Country Club on Thursday, July 11, from one o'clock in the afternoon to closing. Reservations for 90 were made in advance and there was an attendance of 65 members. Dr. V. L. Lance was acting chairman of the entertainment committee and the affair was so successful that it was voted to hold another such outing during August and invite the doctors' wives. The date will be announced later.

The sports engaged in were golf, softball, swimming and horseshoes. In the blind bogey tournament the following doctors received prizes: First, Dr. R. H. Dunn; second, Dr. H. L. Robertson; third, Dr. Archer Wilson; fourth, Dr. John Haley; fifth, Dr. Russel Kessel; sixth, Dr. R. H. Walker; seventh, Dr. J. Ross Hunter; eighth, Dr. J. L. Lambert.

A buffet supper was served from six o'clock on. All the internes from the local hospitals were invited to be the guests of the Kanawha Medical Society.

The following new members were reported in July: Dr. B. V. Blagg, Dr. Goff P. Lilly, Dr. A. C. Chandler, Dr. J. W. Crosson (director, Bureau Industrial Hygiene), Dr. H. M. Escue, transferred from Indiana, Dr. A. E. McClue, transferred from Hancock County Society.

GEO. P. HEFFNER, *Secretary*.

Mercer County

The Mercer County Medical Society met with the Tazewell County Medical Society at the Tazewell Country Club, June 26, 1941. There was an excellent attendance.

A buffet dinner was served at six p. m. by the wives of the Tazewell County Medical Society members. At the meeting following the dinner Dr. Walter B. Martin of Norfolk, Virginia, president of the Virginia Medical Society, read a paper on "Cardiac Decompensation." The discussion of his paper was opened by Dr. R. O. Rogers, Bluefield.

Following this there was a roundtable discussion on the doctor's place in the present national emergency. Dr. Martin told of the discussion at the recent meeting of the A.M.A., regarding selective service examinations, how doctors would be drafted for active service, etc.

FRANK J. HOLROYD, *Secretary*.

Potomac Valley

The Potomac Valley Medical Society held a joint meeting with the Nurses' Alumnae Association on June 18, 1941 at the Potomac Valley Hospital in Keyser, with Dr. J. A. Newcome, president, presiding. The meeting was followed by a banquet at the Corwin Hotel. Major L. Rush Lambert of Charleston was the guest speaker.

E. A. COURRIER, *Secretary*.

Raleigh County

The regular meeting of the Raleigh County Medical Society was held in Beckley, Thursday evening, June 19, with thirty-five members and guests in attendance.

Dr. Michael J. Pronko, Beckley, and Dr. Clyde Thomas Jones, Pemberton, were admitted to the society.

Dr. R. O. Halloran, Charleston, led an interesting discussion on the "Treatment of Some Common Summer Skin Diseases." Following Dr. Halloran's talk, many of the members took part in a general discussion of skin diseases.

CLARK KESSEL, *Secretary*.

News Notes

Dr. Ralph Greenberg, formerly of Terra Alta, will be with the Farm Security Administration, Crossville, Tennessee, for the next few months, after which he expects to open an office.

Dr. Leonidas Williams of Beelick Knob, is a new member of the Greenbrier Medical Society.

Dr. John W. Yost, Williamson, is a new member of the Mingo County Society, having transferred from Logan county.

A. A. M. C. Meeting

The Medical College of Virginia at Richmond announces that the psychiatric floor of the new hospital is scheduled to be opened July 21. Thirty-eight beds will be available.

The Association of American Medical Colleges has accepted the invitation of the college to hold its annual meeting here, October 27, 28 and 29.

Gifts and grants to the college for the fiscal year ending June 30, 1941, totaled $366,844.34.

BOOK REVIEWS

X-ray Treatment of Chronic Arthritis

X-RAY TREATMENT OF CHRONIC ARTHRITIS, by Karl Goldhamer, M.D., Radiological Review Publishing Co., 1941, Quincy, Illinois.

Since chronic arthritis is a common disorder, it would be well for practitioners to have this small composite book handy for frequent reference. That, in my opinion, is the reason that this book was published for the general practitioner.

Primarily, this treatise is presented with regard to treatment of chronic arthritis by x-ray. However, it strikes me as being in part a brief but veritable text-book on chronic arthritis.

The subject matter is discussed from a practical point of view so as to aid the general practitioner in diagnosing and treating this disease.

About one-third of the book is given to x-ray diagnosis. This is an excellent as well as an enlightening portion of the text. The author has used drawings in preference to radiograms to illustrate the different types of arthritis, such as the characteristic signs of atrophic and hypertrophic arthritis and spondylitis. This preference is commendable as the changes are clearly emphasized in the drawings.

This is a brief resumé of the history of roentgen therapy with an explanation of why results are good in some types of arthritis, while in others only palliation or little benefit is to be expected. The indications for x-ray therapy as well as the contraindications are outlined. The classification of the various types of arthritis are given with the pathologic and x-ray findings.

The author gives an excellent outline of his technique for treatment with the usual dosage for the different types of arthritis. The appendix to this chapter should prove to be another suggestive guide on supplementary methods of therapy for the practitioner. The author says: "Atrophic arthritis frequently requires the application of supplementary methods of therapy, while hypertrophic arthritis may be favorably influenced by roentgen irradiation alone."

The text is concluded with a report of 100 cases treated with x-ray containing a note as to his results and the plea that x-ray therapy be used more frequently in those cases which do not respond to other types of therapy.

The author has had extensive experience covering a period of 20 years in the treatment of arthritis in this country and in Vienna.—V.L.P.

Infantile Paralysis — 1941

INFANTILE PARALYSIS—1941, Morris Fishbein, M.D., $1.25 per copy, National Foundation for Infantile Paralysis, Inc., 120 Broadway, New York, N. Y.

In April, 1941, the National Foundation for Infantile Paralysis sponsored six lectures at Vanderbilt University. These lectures were planned by the Committee on Education of the National Foundation with a view to making available for physicians everywhere a resumé of our present knowledge of this disease. Hardly a month passes nowadays without some new contribution to our information concerning the cause, the method of spread, the prevention and the treatment of this serious disorder.

The approach to its control demands a simultaneous attack by many different specialties, since it must be considered as an infectious condition primarily attacking children and seriously crippling in many instances in its ultimate effects. Thus the authority in the field of viruses, the pathologist, the epidemiologist and the orthopedic surgeon cooperate in bringing to an elucidation of this disease the point of view of their specialties.

The National Foundation for Infantile Paralysis does not contemplate the sale of this book as a means of securing income. The book is distributed primarily for educational purposes. The price is something less than the cost. However, it has been considered beyond the purpose for which public funds were collected to send this book without charge to every physician in the United States. No doubt every physician should have promptly available the information that this book supplies. In the presence of an epidemic of poliomyelitis or even of a single case, the knowledge here provided will be invaluable.

Varicose Veins

A test that determines within two minutes whether the branches of the veins connecting varicose veins with each other are functionally adequate is reported in *The Journal of the A.M.A.* for July 12 by Gerald H. Pratt, M.D., New York. The test is valuable in that in indicates whether and at what point a communicating vein will have to be ligated or shortened by surgically resecting part of it.

Dr. Pratt has used the test more than one thousand times and he says that in more than "three hundred resections (of these veins) it has successfully proved its value. * * *"

Woman's Auxiliary

Beckley Meeting

When the doctors of the sixth councillor district meet on September 17 and 18 at Beckley for the symposium on tuberculosis, the Raleigh County Medical Auxiliary will hold its September meeting on Wednesday evening, September 17 at seven p. m. at the Black Knight Country Club.

All wives accompanying their husbands to this meeting are cordially invited to attend the dinner meeting of the Raleigh County Auxiliary. Mrs. Newton DuPuy will be in charge of reservations.

Parkersburg Academy

The Woman's Auxiliary to the Academy of Medicine of Parkersburg met on May 20 at the home of Mrs. A. M. Jones with Mrs. Robert Widmeyer as joint hostess, for tea. Twenty-seven members were present. Mrs. H. A. Giltner, retiring president, turned the meeting over to the incoming president, Mrs. A. C. Woofter. Mrs. Woofter named her committees and chairmen for the coming year.

No date was set for the next meeting.

MRS. C. L. GOODHAND, *Secretary*.

Post Convention Bulletin

The post-convention issue of the *Bulletin of the Woman's Auxiliary* is ready for publication. Besides interesting convention news, it will contain addresses by convention speakers on plans of the Auxiliary with respect to its usual activities and their relation to national defense. Most important, it will present the programs of the departments of Hygeia, Legislation, Program and Public Relations.

These programs will not be sent to members in pamphlet form as heretofore. Therefore, it is necessary for members to subscribe to the *Bulletin* at once. The price is $1.00 per year. Send subscription to county bulletin chairmen.

During the past year, our state had the highest number of subscriptions to the *Bulletin* and we hope to maintain this fine standard during the coming year.

MRS. H. V. THOMAS,
State Bulletin Chairman.

Book by Founder of Women's Auxiliary

"The Medicine Man in Texas", by Mrs. Samuel Clark Red, Houston, Texas. "Mrs. Red most certainly has presented many interesting accounts of the medical men of our great state and their prominent connection with the development of our history. It is well written, interesting, entertaining, mechanically satisfactory and is well worth the price."—Dr. Holman Taylor, Editor, Texas State Journal of Medicine.

In May, 1922, at St. Louis, Mrs. Red organized the Woman's Auxiliary to the American Medical Association. As the wife of Dr. Samuel Clark Red, she had attended many medical association meetings. She envisioned the education of the laity to the problems of organized medicine, especially through the women's clubs, and a closer fellowship between doctors' families.

Recurrent Mouth Disease

"In two cases of recurrent, scarring aphthae, sulfathiazole was beneficial in relieving soreness of the lesions and promoting prompt healing," Richard L. Sutton, Jr., M.D., Kansas City, Mo., reports in *The Journal of the American Medical Association* for July 19.

"Sulfathiazole did not prevent recurrences, however," he continues, "but it gave comparable relief a second time. A large dose works better than a small one. I know no other treatment as effectual."

Cases of aphthae, the author says, are not common and are recognized under many names, but all are alike and their cause is as yet unknown.

"Commencing as a small nodule within and beneath the mucous membrane of the lip, cheek or tongue," he explains, "a lesion increases in size, sloughs and causes severe pain, becomes a crateriform ulcer with inflamed, firm borders, runs a course uninfluenced by local treatment and eventually heals, leaving a soft, pliable, depressed, whitish scar. Several lesions may be present simultaneously. The patient, suffering over a period sometimes of many years, can scarcely swallow during exacerbations. He seeks relief, generally without any success whatever despite the ingenuity of numerous consultants, and shows a mouth with many scars to the sympathetic practitioner, who knows the better the wider his experience is that he can indeed do little to give relief."

Medical Preparedness

Naval Reserve Corps

Dr. R. H. Walker, chairman of the Association's Committee on Medical Preparedness has received notice that the Medical Specialist Unit of the Naval Reserve Corps wishes to receive applications for commissions in the Reserve of one internist, one roentgenologist and one urologist. These men must be recognized in their specialties and must not be past 50 years of age. The opportunity is a good one for any man who expects that he may be called into the service eventually, for he would receive a better rating in this way than if he waited for a call.

Any doctor in the above named specialties who is interested in so helping our country in the present emergency, and who is not already a reserve medical officer, should get in touch with Dr. Edward F. Reaser, temporary organizer of the unit at Huntington, West Virginia.

Rehabilitation of Selectees

The Commission on Physical Rehabilitation, recently appointed by the Health and Medical Committee of the Federal Security Agency, reports in the Medical Preparedness Section of *The Journal of the American Medical Association* for July 19 that it "is authoritatively infromed that the Army will maintain its present high physical standards of eligibilty for military service and will not undertake the rehabilitation after induction of men classified by Selective Service and Army induction boards as having remediable physical handicaps. In making the following recommendations, the commission has therefore been restricted to a program of voluntary physical rehabilitation.

"In order to provide information concerning the frequency and the nature of remediable defects among men examined for Selective Service it will be necessary to require physicians of Selective Service and Army induction boards to state in every instance whether the physical handicap responsible for classification I B or IV F is remediable in their opinions. Such registrants should be grouped in a special classification and designated as I B-R and IV F-R. Without this information it will be impossible for states and local communities to prepare plans and to estimate the cost of rehabilitation.

"The diagnoses recorded on the records of reigstrants classified in groups I B and IV F by physicians of the Selective Service and Army induction boards give little indication of the possibilities for complete or partial correction. There is a mistaken impression that all defects of registrants in class IV F are not correctable. Actually, registrants in I B have handicaps which restrict their availability to limited forms of military duty, yet the physical disability in some is permanent and non-remediable. Registrants in IV F are suffering from major disabilities which render them incapable of performing any military duties, but some of the men in this category could be restored to group I B or even I A by the correction of their physical handicaps.

"The special classification as I B-R and IV F-R will act as an incentive to voluntary correction of remediable physical handicaps. A comprehensive program for physical rehabilitation of the young men of the nation is important in order to maintain effective manpower for industry as well as for military service. It will also have an influence in retarding the development of disabilities of middle age which are responsible for an unemployable group in every community.

"Experiments in voluntary rehabilitation have been proposed for a few local areas by the American Red Cross and several other agencies. A small experiment in a few selected urban and rural communities will not provide a satisfactory yardstick to estimate the cost for the entire country nor can it provide a reliable answer to the problem. The commission is of the opinion that we must immediately lay the groundwork of comprehensive future plans for physical rehabilitation of our man power by accumulating accurate information in every part of the United States concerning the frequency and the nature of remediable physical disabilities and it therefore submits the following recommendation:

"1. Form 200, 'report of physical examinations,' under the Selective Service and form 221, WD-AGO, 'report of induction of Selective Service man,' should be amended to contain (a) a place for the examining physician to state whether or not, in his opinion, the physical defect causing rejection is remediable or correctable; (b) the creation of subclassification of I B and IV F (I R-B and IV F-R) to indicate whether or not the registrant is classified as suffering from a remediable or correctable physical defect; (c) statements to be signed by the registrant in these subclassifications relative to (1) his willingness to undergo corrective and remedial procedures, (2) permission for release of information pertinent thereto and (3) whether or

not he will provide for appropriate treatment out of his own financial resources.

"2. (a) Subparagraph c of paragraph 165 of the Selective Service regulations should be amended to permit the examination at any time of confidential records pertaining to the physical condition of a registrant by the governor of the state or his designated official representative; (b) Subdivision b of paragraph 338 of the Selective Service regulations should be amended to provide appropriate parts of the report of physical examination, form 200, in duplicate, and arrangements be made whereby one form may be retained temporarily for rehabilitation purposes by state Selective Service headquarters and state rehabilitation boards.

"3. The following instructions should be issued by the National Director of Selective Service to all local boards: When a local board has finally placed a registrant in class I B-R or IV F-R, the chairman shall write to the registrant advising him of his classification and of the underlying condition that caused such classification, and shall inform him that the condition is considered remediable by the examining physician. He shall also advise the registrant to have the remediable defect corrected by his own physician or dentist or, if the registrant is unable to bear the necessary costs involved, he may have the work performed by applying to the appropriate agency or hospital in his area. For this purpose the state director of Selective Service shall supply all chairmen of local boards with a list of agencies, hospitals or other institutions located in the neighborhood which are prepared to engage in this rehabilitation work during the period of the national emergency. The chairman of the local board shall further advise the registrant of the time that the board has allowed for the correction of his defect, at the expiration of which time the registrant must present himself to the board for reexamination and reclassification.

"4. In all states and local areas rehabilitation committees should be created jointly by the Federal Security Agency and the Selective Service System to collaborate with professional groups and with local governmental and voluntary agencies in the development of local rehabilitation facilities.

"5. Only a small proportion of the population can afford to pay or will be willing to pay for corrective measures which may make them available for military or industrial service but which do not as yet interfere with their present civilian occupations. Communities differ greatly in the availability of medical facilities, and some states and many local communities will be unable to provide the remedial measures which may be necessary to correct physical handicaps. Because of widespread shifting of population during and after the national emergency, the responsibility is national as well as local. In order to meet the situation realistically it is recommended that Congress enact legislation to defray the cost. As this is primarily a matter of vital necessity for national defense, the cost should be met directly by federal defense appropriations to the Federal Security Agency, when needed, utilizing fully its available local medical, dental and hospital facilities. Without federal legislation of this nature, it can be predicted that little progress in voluntary physical rehabilitation is to be expected.

"In the opinion of the commission the alternative to such a voluntary program is lower physical standards of eligibility for Selective Service and compulsory physical rehabilitation after induction into the Army. Action is required along the lines of one or other of these alternatives, for the present standards of physical eligibility have reduced the nation's reservoir of eligible registrants to a number far lower than had been anticipated."

Encephalitis Control Measures

It is of the utmost importance to determine the exact means of transmission and the reservoir hosts in nature of the viruses of the St. Louis and Western equine encephalitis in order that environmental control measures may be established, William McDowell Hammon, M.D., San Francisco, declares in *The Journal of the American Medical Association* for July 19 in a report on a study of an epidemic of encephalitis in the Yakima Valley, Washington.

"Since no therapeutic measures are available at present," he says, "and the age distribution, geographic distribution and epidemiologic features of these two encephalitides make them of special concern at present to military camps, it is even more important to consider what prophylactic measures are available. Formaldehyde-treated vaccines for the equine viruses have been found effective in horses and laboratory animals and have been tried on human beings, but although mice may be protected against the St. Louis virus with similarly prepared formaldehyde-treated virus suspensions, to my knowledge these have not been tested in man. However, once an epidemic begins and the etiologic

agent is definitely identified in a laboratory equipped for work with viruses, the time for effective use of a vaccine probably will have passed. * * *"

A possible clue as to the reservoir hosts in nature of these two viruses is contained in Dr. Hammon's report. He says that "the blood serum of several wild and domestic birds and mammals was tested for the presence of antibodies to one or both of the viruses and some tests were positive."

He explains that for a number of years, in the summer months, occasional cases of encephalitis of unknown cause have occurred in human beings in the Yakima Valley. In 1939 the number of these cases first reached epidemic proportions and in 1940 another epidemic appeared and an investigation of it was begun.

Among the findings was that the outbreak involved both horses and human beings. The mean age of patients was 45.7, the median 51 and the range two to eighty. The rate increase progressively with age. Eighty-one per cent of the patients were males and the case fatality rate was 22.4 per cent.

"Neutralization tests performed on the blood serum of 50 patients with a definitely established diagnosis showed a total of 86 per cent neutralizing the Western equine virus, 72 per cent the St. Louis virus and 56 per cent both," the author says. "Seventy-five comparable control samples of serum showed neutralizing antibodies for the equine virus in 6.7 per cent, for the St. Louis virus in 28 per cent and for both in 2.7 per cent.

"Clinical, epidemiologic and laboratory evidence all indicated the presence of both viruses, and it appears probable that some patients had mixed infections.

"The course of the illness in adults was similar to that described for the St. Louis disease. * * *

"Some mild attacks occurred which, without lumbar puncture or the neutralization test, would have been diagnosed as grippe or infection of the upper part of the respiratory tract.

"The incubation time in man for either virus may be as short as seven days.

"Although many patients were treated with drugs of the sulfonamide group, no definite evidence of the effectiveness of these drugs was obtained.

"Serum therapy with hyperimmune rabbit serum should not be attempted for the Western equine disease."

Physical Disqualifications

"Although the current rate of disqualification under the Selective Service Act is greater than that observed during most of the World War period, one is not justified in concluding that the health of the American youth today is inferior to that of young men of a quarter of a century ago," *The Journal of the American Medical Association* for July 12 points out.

"Early this year Britten and Perrott published data on the physical defects of men drafted during 1917-1918 which showed that about one-third of those examined were considered unfit for general military service under the standards then prevailing. More recently these same investigators have reported that some 43 per cent of those examined under the present Selective Service Law are being classified in the same general category. This percentage includes those rejected as unfit for any military service (class IV-F) as well as those found fit for only limited military service (class I-B). Actually, about 28 per cent are being placed in the former group. With regard to the prevalence of various disqualifying conditions, deficient or defective teeth alone render over eight per cent of the men examined unfit for general military service. Eye defects and diseases are responsible for about five per cent of those placed in class IV-F and class I-B. Comparable percentages for other frequently found defects are 3.69 for diseases of the cardiovascular system, 3.17 for musculoskeletal diseases, 2.95 for ear, nose and throat diseases and 2.02 for hernia. Other important factors, which were, however, less frequently observed, are diseases of the respiratory system, venereal diseases, foot diseases, overweight and underweight, and diseases of the genitourinary system. * * * As pointed out by Britten and Perrott, improved diagnostic techniques, changes in physical standards and a dissimilar situation with regard to immediate need for soldiers tend to vitiate comparisons. An official release from the War Department points out that the examiners of 1917, who were trying to build an army as fast as possible, train them quickly and ship them to France, were more lenient in passing on men who seemed physically able for duty required. Examiners today are not pressed, and directions to boards incline toward stressing the necessity of securing men who are physically able to withstand the stress of a year's intensive training. Few of those who comment on the draft realize that physical requirements were

changed seven times during the World War. Thousands of men were accepted in 1917 who have been rejected by present day examiners. Furthermore, the War Department says that the advancement in medical science gives the present day examiners a decided advantage over medical men of twenty years ago. For this reason an unknown number of men are rejected today because of tuberculosis, latent syphilis, obscure mental derangements and other disorders who would have been passed in 1917. Fortunately, many defects which are found by present day techniques are remediable. Moreover, special attention is being given to programs of rehabilitation as well as prehabilitation of registrants."

Physicians For British Army

"Some months have passed since the President of the United States first requested the American Red Cross and a number of medical organizations, including the American Medical Association, to aid the American Red Cross in its effort to comply with the request of the British Red Cross for one thousand physicians to reinforce the British medical services, including the Royal Army Medical Corps and the Emergency Medical Service," *The Journal of the American Medical Association* for July 5 says in an editorial. "In pursuance of this project, extensive announcement was made in the public press. From time to time application blanks have been sent to physicians in the United States who seemed to meet the qualifications. By June 23, 1,343 inquiries had been received; 643 applications had been mailed in response to the inquiries received; 69 physicians who applied had been rated as professionally unqualified; 67 had been pronounced professionally qualified, but of these two have withdrawn their applications; 52 applicants are awaiting the decision of the committee, and 33 have been pronounced eligible for a visa. Fifteen applicants are now in process of having physical examinations completed and 17 have been pronounced physically fit. Actually two men have been granted United States passports and 15 have reached the stage where they are awaiting passports. The total figure of physicians apparently ready to go or likely to be made available is about 65, with an additional 25 still in process before the committee. This will mean that by the middle of

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July approximately 90 men will be the response to the request.

S. S. Registrants

Medical students and internes who are Selective Service registrants should endeavor to obtain commissions in the Medical Reserve Corps of the United States Army, Lieut. Col. Carleton C. Pierce, Acting State Director of Selective Service, said today.

Director Pierce called attention to a recent announcement by the War Department that male medical students who have completed more than two years in a Grade A medical school in the United States are eligible for commissions as second lieutenants in the Medical Administrative Corps Reserve, and that physically qualified internes may be commissioned as first lieutenants in the Medical Corps Reserve.

Students and internes in the State of West Virginia who wish to apply for Medical Reserve Corps commissions, the director said, should make application to the Commander, Fifth Corps Area, Fort Hayes, Ohio.

Neighbor Journals

Vacations

The most unsuccessful case that the average doctor treats is himself. When that patient begins to show signs of the wear and tear of day and night service to his profession; when the imaginary pains of his patients become real torture to the physician, or the stuffing and glutting of the obese matron down at the corner causes the doctor to bolt his own food and forsake his table companionship to prescribe; then it is time for him to take his own medicine, which usually is a vacation.

Without detracting from the value of medical meetings it must be clear that to this physician a convention is not a vacation.

There are certain rules for a doctor's vacation which are, if not paramount, indeed advisable: first, avoid telephones as you would a grand jury; second, never register as "doctor"; third, do not take your medical cases along with you (if you distrust your colleagues, hide in one of your travel-

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1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph., Gon. & Ven. Dis., 23, 201 (March), 1939.

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*Silver Picrate is a definite crystalline compound of silver and picric acid. It is available in the form of crystals and soluble trituration for the preparation of solutions, suppositories, water-soluble jelly, and powder for vaginal insufflation.

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ing bags a very small first-aid outfit); fourth, do not visit hospitals, medical schools, other doctors (unless they are close personal friends); fifth, do not put yourself on a time schedule; sixth, even if you do not obey any of these commandments, at least take a vacation.—*Michigan Medical Journal.*

Trichinosis

One-sixth of the population of Washington, D. C., carries the trichinosis parasite a four-year study by the Zoology Division of the United States Public Health Service has disclosed.

Presence of the trichinosis organism in the body does not mean, however, that a person actually has the disease, the U. S. Public Health Service emphasized.

Disclosure of the unexpectedly high incidence of the parasite followed examination of 3,000 specimens of postmortem material provided by 10 Washington hospitals, four U. S. Naval hospitals and two U. S. Marine hospitals in eastern seaboard cities.

Of the 2,330 specimens obtained from Washington hospitals, 362 or 15.5 per cent, were infested with trichinae, the organism causing trichinosis. The remaining 670 specimens, which came from service hospitals in other cities, were 18.8 per cent infested.

Washington was selected as the chief source of material because of the cosmopolitan nature of its population. Gallinger, George Washington, Garfield, Georgetown, Mt. Alto, U. S. Naval, Walter Reed, Freedmen's, St. Elizabeth's and Children's hospitals cooperated.

The percentage of individuals carrying the trichinosis organism in the 3,000 specimens is believed to indicate the extent of infestation to be found in similar population groups in other parts of the United States. Trichinosis infestation is believed to be less in rural areas and a survey of these areas is now being made by the Zoology Division of the National Institute of Health.

Despite popular opinion, Public Health Service zoologists believe the practice of feeding raw cabbage to hogs is more to blame for trichinosis in humans than eating improperly cooked pork.

It is believed that if all hogs were corn-fed, the disease could be much more scientifically controlled

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than in placing full reliance on thorough cooking of pork for human consumption.—*Journal of the Medical Association of Georgia.*

The N. P. C.

The National Physicians' Committee for the Extension of Medical Service is a voluntary, non-political and non-profit making organization dedicated to the task of making more widespread the distribution of the most effective methods and equipment in medicine and surgery, and of familiarizing the public with the values, methods and achievements of American medicine.

In a recent publication it calls attention to the verdict handed the A.M.A. by a Federal jury in Washington, D. C., a verdict which said, in effect, that "organized medicine had entered into a conspiracy—a criminal conspiracy—but that there were no conspirators"; that "A crime had been committed—but that there were no criminals"; that "Trade had been unlawfully restrained—but that none were responsible for the restraint."

The N. P. C. summarized the issues involved in this Federal Court action as follows: "(a) The exclusive right of physicians to 'practice medicine.' Presumably, a layman or a lay organization should have the legal right to provide medical service. (b) The right of physicians to control or influence the qualifications of physicians on hospital staffs or the qualifications of physicians to be granted courtesy privileges in hospitals. (c) The right of physicians to control or importantly influence conditions in

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hospitals under which interne training is provided. (d) The right of physicians to determine educational and ethical standards that shall qualify individuals for the rendering of medical service."

The N. P. C. maintains that these are basic rights essential to the safeguarding of the public and that since they have been questioned every physician must aid in the required solution, which in its opinion has two parts: "First, American Medicine must be given authority from the court of final jurisdiction, for a code of conduct. This authorization must define the extent and the nature of such controls.

"The next step in the process of securing this authorization is a new trial of the A.M.A. suit in the Federal District Court, or an appeal to the Appellate Court and finally an appeal, if necessary, to the Supreme Court of the United States.

"This is the responsibility of the A.M.A. Already, the necessary steps have been taken. Regardless of time, energy, or expense involved, there will be no retreat or compromise until all of the issues have been settled by the authority with final jurisdiction.

"Second, the public must be made aware of its vital interest in this all-important issue."

The N. P. C. maintains that if the American public really realized how serious was the threat to traditional medicine as they have known and profited by it in this country they would turn thumbs down on a movement that is designed to completely alter its whole structure. The committee is doing all within its power to bring to public attention the true facts of what American medicine has stood out for in its diligent search for a method of better serving the indigent and lower income groups and in extending to all persons a more effective health service.

The committee points out that labor, by acting collectively in its own interest exacts enormous annual contributions from its membership to establish defense funds that have made it invulnerable not only to public opinion but to legal restraint. Medicine needs to learn some of these lessons of collective action, but it proposes to avoid the compulsion exercised by the unions on its members.—*Virginia Medical Monthly.*

Birthmarks

The old belief that angiomas (birthmarks) need not be treated during infancy is no longer accept-

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able in the light of present-day knowledge. On the contrary, most authorities agree that the best time to treat these lesions is as soon as the diagnosis is made. Treat the infant during the first six weeks of life if at all possible. Indeed, it may be considered axiomatic that the earlier in life treatment is instituted the more satisfactory the cosmetic result. The physician is urged not to tell the family to wait for treatment until the child gets older.

As a rule, vascular nevi grow slowly during infancy and persist unchanged throughout adult life. Occasionally these lesions undergo spontaneous involution, leaving delicate atrophic scars where once red skin blemishes existed.

Not infrequently, however, angiomas assume active growth characteristics and become sizeable tumors within a few weeks or months. The prevention of this unbridled growth may be considered the physician's chief responsibility to patients with angiomas.

Equally important is the problem of restoring normal skin coloring ot pigmented areas. Whereas many angiomas blanch spontaneously, others continue to become more deeply discolored unless treated properly.

Generally, the amount of blanching produced by diascopic pressure serves as a fair index to the degree of depigmentation one may expect following treatment. If the discoloration is entirely removed by pressure, one may expect an excellent cosmetic result. If, however, the blemish persists during diascopic pressure, the ultimate result is usually less favorable.

Unfortunately, not all vacular nevi respond equally to treatment. The response is brilliant in some, negligible in others. It behooves the physician, therefore, to familiarize himself with the physical characteristics of all nevi so that he may recognize those which may be helped by early treatment.

In the early days of roentgen and radium therapy, disturbance in growth was produced by over-irradiation of adjacent tissues such as bone. Today it is possible to plan treatments so that the radiation is confined largely to the involved area.

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Strawberry marks are flat or slightly elevated lesions of the skin which vary in color from light pink to purple and which are completely blanched by diascopic pressure. They appear at birth or soon thereafter. They may be single or multiple. When treated early, excellent cosmetic results may be obtained.

In treating strawberry marks, or any nevus, patience both on the part of the patient and the physician, is of paramount importance. It takes months and sometimes years to treat an angioma properly.

Treatment should not be given at too short intervals lest lesions be overtreated. Indeed, overtreated lesions may be just as disfiguring as those that have been undertreated. Once treatment has been started and growth ceases, nature assumes a very important rôle, which must be recognized in planning the care of angiomas. As a rule, treatments should not be given at intervals of less than six to eight weeks. This allows enough time between applications to observe the continued effects of nature plus the therapeutic agent. Later, when it becomes evident that the patient has had almost all the treatment necessary, the interval between treatments may be lengthened to three to four months.

Strawberry marks are very susceptible to radiation therapy. Roentgen rays generated at low voltages and delivered at short target skin distances are ideal for this type of lesion. Unless deep cavernous elements are associated with the strawberry mark, there seems little reason for using interstitial radium or radon.

Cavernous angioma may involve (a) only the superficial layers of the skin, (b) the deeper layers of the skin and subcutaneous tissues, or (c) both. When only the superficial layers of the skin are involved, the lesions are slightly raised above skin level. The covering skin is exceedingly thin, allowing the cavernous red-violet vessels to be seen through it.

Cavernous angiomas situated below the cutis are usually thicker and more lobulated than the superficial lesions. Usually they extend above the skin level in a dome-like manner. They vary in color from deep blue-violet to the color of normal skin depending upon the thickness of the skin covering. The angioma may consist of many small vessels which feel like a bunch of worms or it may be composed of a few large sinuses.

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Occasionally cavernous angiomas involve both the superficial and deeper structures of the skin. In such instances the subcutaneous or submucous portion is usually larger than the cutaneous lesion. It is frequently difficult to differentiate between this type of cavernous angioma and nevi which are a combination of strawberry mark and cavernous angioma.—*E. P. in the Penna. Medical Journal.*

Poliomyelitis Epidemics

Last summer infantile paralysis epidemics swept a dozen states from West Virginia in the east to the State of Washington on the Pacific coast. There were 9,768 cases reported in 1940, an especially large number.

The epidemic battle so far this year appears to center in the southern states. Outbreaks have already occurred in Georgia, Alabama, and Florida. The National Foundation for Infantile Paralysis is prepared to use all of its resources in combating these and any other epidemics which may occur during this summer.

A Thought For Us All

Complacency would be stupid while tuberculosis is still causing more deaths in this country than any other form of communicable disease except pneumonia, and while there are less than a hundred thousand sanatorium beds to care for half a million people with recognizable and clinical infection.—Geddes Smith.

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Medical Aid to China

Dr. Co Tui, vice president of the American Bureau for Medical Aid to China, has accepted an appointment to the government-sponsored China Defense Supplies Commission.

Dr. Co. Tui, will serve as medical adviser to the commission, which is in charge of all purchases here for the Chinese government under the terms of the seven billion dollar lend-lease program. He will also advise and help coordinate medical purchases for China made by the American Red Cross and United China Relief, now conducting a coordinated national campaign for $5,000,000 to provide relief to China.

The American Red Cross will handle all transport of medical supplies across the Pacific and up the Burma Road to Free China.

The American Bureau for Medical Aid to China has undertaken to supply all personnel needs, to recruit Chinese doctors living abroad for service in the Chinese Medical Corps, to equip and support the special emergency training centers in China for medical aides and to aid the Chinese National Health Administration in its anti-epidemic control plan.

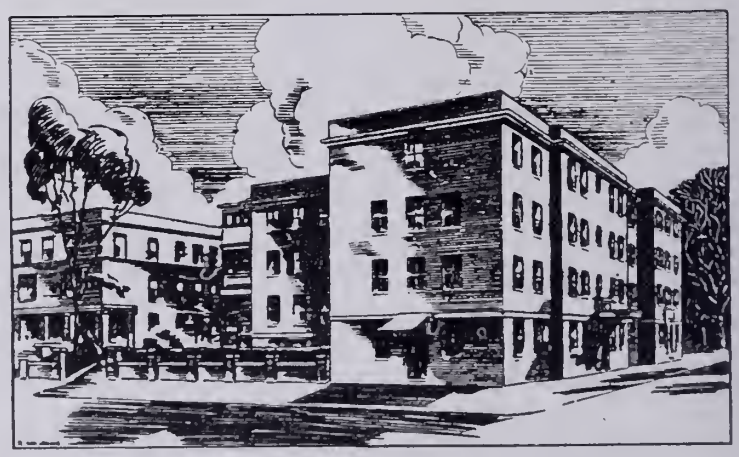
The Medical Bureau has a special department at 1790 Broadway, where American doctors and nurses can apply for service in China. Surgeons, doctors, nurses, pharmacists, ambulance drivers and medical assistants are eligible for serving in the American relief corps to China. One American-British-Canadian ambulance corps of fifty members has left for China, financed by the American Friends Service Committee.

Aid for Paralysis Victims

Under the usual plan of the National Foundation for Infantile Paralysis, approximately one-half of the net proceeds, or $1,096,865.84 will be used by state and county chapters of the Foundation to aid those in the various communities who have been stricken with the disease.

The other portion of the funds, or $1,007,594.69 will be expended by the National Foundation to combat epidemics of infantile paralysis, for research, for aiding hospitals and institutions in the study of the treatment of the after effects of the disease and in disseminating knowledge regarding the disease and its treatment to the medical profession and the public.

McMILLAN HOSPITAL Charleston, W. Va.



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Cost of Insulin

Believing that its position in the insulin industry could only be fully appreciated by a thorough knowledge of the factual background with respect to this field, E. R. Squibb and Sons has issued a statement in connection with its plea of nolle contendre filed and accepted in response to charges of price-fixing brought by the government in March, 1941, under the Sherman Act, thus disposing of this action.

E. R. Squibb and Sons together with C. H. Palmer, chairman of its board of directors, were named defendants, as were the two other manufacturers and distributors of insulin in the United States; Eli Lilly and Company and Sharp and Dohme, Inc., with certain of their officers. The government dropped its action against Dr. John F. Anderson, a vice president of E. R. Squibb.

The statement by E. R. Squibb and Sons follows:

* * * For the year 1940 alone, Squibb suffered a loss of over $20,000, on its insulin sales * * * for the ten year period from 1931, profit to Squibb was equivalent to less than five per cent of its total sales.

The cost of the glands used in the manufacture of insulin has increased 60 per cent since 1925 and 30 per cent since 1931. * * * Manufacturing methods have reduced the total cost of manufacturing the product 30 per cent since 1931.

During the same period * * * the selling price of our insulin was reduced 75 per cent. A 10 c.c. 40 unit vial of insulin, the standard vial sold, sold for $2.40 in 1925, $2.00 in 1931 and at present sells for 57 cents. This means that the average cost of a daily dose to the majority of diabetics was 31 cents in 1931 and is eight cents today.

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RECENT ADVANCES IN OUR KNOWLEDGE OF CARDIOVASCULAR DISEASE WITH SPECIAL REFERENCE TO THEIR CLINICAL APPLICATION

By WILLIAM G. LEAMAN, Jr., M.D., F.A.C.P.
Philadelphia, Pennsylvania

"When a man's life is at stake, no delay is too long."—*Juvenal, Satires,* Sat. VI, 1, 221.

* * * * * *

We are living in an age that frowns upon delay. New procedures and therapeutic agents are descending upon the modern practitioner in ever increasing numbers. The temptation is great to discard older ideas in favor of newer concepts before the latter have been accurately weighed in the clinical balance. A glance into the discard of the past decade will reveal many popular remedies that have failed to live up to the enthusiastic predictions of their originators. After all, the physician in the field is under no moral obligation to use new or unproved methods as soon as they are announced. Often the delay between the laboratory discovery and its application at the bedside may be an actual advantage when the situation is viewed from the standpoint of the patient.

With these thoughts in mind, my assignment this afternoon takes on a less forbidding aspect. My purpose will be to outline as briefly as possible some of the recent contributions in the field of cardiovascular disease that have weathered the storm and found a useful place in practice. Considering the countrywide tendency of medical meetings to resolve themselves into teaching symposia, I make no apology for presenting a paper of this type. I must emphasize, however, that the following evaluation is that of only one observer in a constantly broadening field.

THE AUTHOR

Dr. Leaman, graduated University of Pennsylvania School of Medicine, 1922; interned University of Pennsylvania Hospital, 1922-1924; postgraduate, Harvard University; Associate Clinical Professor of Medicine, Woman's Medical College of Pennsylvania; cardiologist, Woman's College, Memorial, Northeastern and Municipal Hospitals, Philadelphia; Fellow American College of Physicians.

RHEUMATIC HEART DISEASE

The modern treatment of rheumatic heart disease is influenced by the pathologic studies that have revealed the widespread nature of the lesion. No longer can we apply the old

recommendation, "blankets and six weeks" to every patient. We now recognize that active rheumatic infection may last from months to years in the majority of cases. Consequently, the main therapeutic problem is to provide long and adequate bed rest in a suitable environment where competent medical attention is available. Since studies have shown that recurrence of rheumatic infection comprises a dangerous complication, special care is taken to protect these children from acute upper respiratory infections, especially those caused by the hemolytic streptococcus. These infections are known to be more prevalent during the winter and spring in urban populations of the temperate zone.[1] They also show an increased incidence among children of underprivileged classes where faulty diet and housing conditions prevail. In planning treatment for rheumatic children, we should always recognize these facts. While removal of the patient to a more suitable tropical or subtropical climate is often not possible or practical, we should always try to improve the environmental conditions of this group.

PROPER CARE

Treatment of rheumatic fever at the onset can best be carried out in the hospital. When the acuteness of the storm abates, the patient may be taken home if investigations show that adequate care is available there and a responsible member of the household can be trained to nurse the patient efficiently. In instances in which the home conditions do not fulfill minimum requirements, a temporary foster home should be sought where proper care can be arranged over the long period of convalescence. The special heart hospital is, of course, an ideal place to transfer the patient when the acute phases of the illness are over, but unfortunately these institutions are still too few in America to even shoulder a small percentage of the burden.

How much nearer are we to the efficient management of rheumatic infection by serum or vaccine therapy? Unfortunately, recent investigations show that the rational use of these agents in daily practice is still beyond the horizon. We must face the fact that the etiology of rheumatic fever remains unknown. While enthusiastic investigators have from time to time summarized evidence that seems to point to a particular microorganism or virus, we must admit that so far we have been unable to reproduce the disease in animals. The hemolytic streptococcus is still the organism uppermost in our minds when we discuss the etiology of rheumatic infection. However, even its casual relationship to initial attacks of the disease is far from settled. Allergy has been brought into the discussion to permit a wider range of speculation regarding the relationship of the streptococcus to rheumatic infection when all cultures from patients continue to be negative. At present, we can certainly say that the past decade has produced no conclusive evidence that makes the use of sera or vaccines a logical procedure in the management of the rheumatic state.

HEREDITY

All of us have encountered many cases of rheumatic heart disease in single families. Even the simultaneous occurrence of several cases in one family should not be interpreted as proof of the spread of rheumatic infection by intimate contact. Recent studies show that there is a distinct hereditary susceptibility to the disease. The physical characteristics of the "rheumatic type" have been described by many observers.[2] These studies should make the practitioner more than ordinarily suspicious in the interpretation of symptoms presented by members of such family groups under his care. He should feel that while he is handicapped by heredity, he should nevertheless do all in his power to improve housing conditions, diet, and other hygienic measures of everyday life. In this way recurrence of attacks, or even the initial infection, may be avoided in some instances and much heart damage prevented.

With the advent of a new group of chemo-

therapeutic agents, like sulfanilamide and its derivatives, it is only natural to speculate on their value in the treatment of rheumatic infection. Reports of various observers[3 4 5] agree concerning their ineffectiveness in controlling this disease. Moreover, various toxic symptoms constitute actual dangers in some cases. Recent investigators,[6] however, have reported that small daily doses of sulfanilamide may be administered safely over a long period of time and appear to be of value in preventing recurrences of acute rheumatic fever.

In an attempt to imitate nature by elevating the body temperature in order to kill the invading organism, artificial fever therapy has been tried in cases of rheumatic infection. While this procedure has no effect on rheumatic carditis, the elevation of the body temperature does diminish the severity of the choreiform movements in a large percentage of these cases. Sutton and Dodge[7] claim that increase in the body temperature by artificial means for several hours on successive days increases phagocytosis and stimulates antibody formation.

DIGITALIS

While the routine use of digitalis in children suffering from inactive rheumatic heart disease who have good exercise tolerance is admitted to be contrary to the best principles of practice, the use of this drug when congestive failure complicates active rheumatic fever has been the subject of much difference of opinion. Recently, Walsh and Sprague[8] have published evidence that points to the value of digitalis in these instances. They emphasize the fact that the drug must be given with greater caution to children, and the response, while not equal to that seen in adults, may be expected in over 40 per cent of the cases. Untoward effects are more readily produced in children. Consequently the physician in practice should always be on the alert, particularly when giving digitalis to patients who have active rheumatic carditis complicated by congestive failure.

Recent investigators have been unable to conclude that even the salicylates possess a specific action on rheumatic fever. That they relieve pain and reduce body temperature every physician knows, but they do not influence the course of the disease, nor do they prevent heart damage. Moreover, their antipyretic action is very apt to give a false sense of security to the physician who does not study his patient closely for other signs of rheumatic infection. It is a good rule for this reason to stop salicylate therapy when the temperature is normal for several days before permitting activity of any kind. In the presence of rheumatic pericarditis with effusion, recent studies show that large doses of salicylates often bring prompt relief with rapid reduction in the pulse rate and reabsorption of the pericardial exudate.[9]

SUBACUTE BACTERIAL ENDOCARDITIS

For many years attacks of various kinds on subacute bacterial endocarditis have failed. Occasional spontaneous remissions, so common in this disease, occur in patients undergoing some form of treatment and serve to kindle false hopes that are short-lived. When the streptococcus viridans becomes entrenched in the heart valves, it can successfully resist any degree of artificially produced fever. During recent years the sulfanilamide drugs have been used, but after the initial wave of enthusiasm, it became evident that the use of these drugs alone was not the final answer. Lately combined methods of therapy have been tried with more success. Lichtman and Bierman,[10] in a study of a large series of cases, report recovery in six per cent after the use of sulfanilamide drugs alone. When chemotherapy was combined with heparin, following the technique recommended by Kelson and White,[11] recovery occurred in 11.5 per cent. When chemotherapy was combined with induced hyperthermia, the incidence of recovery rose to 16 per cent. In the cases in which hyperthermia was induced by the intravenous injection of typhoid-paratyphoid vaccine and combined with chemotherapy, the incidence of recovery rose to 25 per cent. While the

group of cases studied is comparatively small, the result so far seems to be encouraging. It appears that the final victory in this disease may follow a combination of several methods of treatment rather than the use of the sulfanilamide drugs alone. Before this is possible, however, it is essential for the practicing physician to realize that the diagnosis should be made as early as possible in order that treatment may be begun before the disease becomes well established. In other words, physicians should be on the alert to the possibility of the existence of subacute bacterial endocarditis in patients known to have chronic valvular disease or congenital abnormality of the heart. Should these patients develop malaise, fever, joint or muscle pains, anorexia, or nausea in the absence of evidence of another disease to explain the picture, the presence of subacute bacterial endocarditis should be suspected.[12] Appropriate chemotherapy or combined therapy started weeks earlier than is usually the case may further increase the small percentage of "cures."

Experience with the sulfanilamide group of drugs allows us to go a step further. In patients known to have cardiac lesions of the type that predispose to subacute bacterial endocarditis, is it not good policy to administer these chemotherapeutic agents in small doses before and after dental extractions and tonsillectomy? The streptococcus viridans is most likely to enter the blood stream from the raw areas in the mouth and throat of these patients directly after operation. In this way we may hope to establish contact between organism and drug before the former is deeply embedded and inaccessible in the vegetations of the heart valve or in the mural thrombus.

CONGENITAL HEART DISEASE

In many instances uncomplicated patent ductus arteriosus is compatible with a normal life. However, in a series of 92 cases studied by Abbott,[13] 28 died of subacute bacterial endocarditis, 24 of cardiac decompensation, 16 of heart failure and two of sudden rupture of the ductus. The average age at death was 24 years. Ligation of the ductus, recently carried out successfully by Gross[14] in uncomplicated cases, offers the possibility of improving a most uncertain future. Gross exposes the ductus from the left side. The pleural cavity is entered, the lung collapsed, and the structures adequately exposed. He reports little postoperative reaction, no postoperative complications and no mortality in his first four cases. In each patient following operation the thrill disappeared and the diastolic pressure rose to a normal level. In two instances the transverse cardiac diameter decreased and one undernourished child gained nine pounds following ligation. After the operation each child returned to school with a much improved circulation.

The possibility of saving a patient who has a congenital lesion of this type should keep us on the alert. We should, whenever possible, go beyond the diagnosis of "congenital heart disease" and attempt to determine the various anatomic defects that make up the picture. With the help of the improved method of roentgenography this is easier for the modern clinician than it has been in the past.

HYPERTENSIVE CARDIOVASCULAR DISEASE

Today more than ever before, it must be realized that hypertension is not in itself a disease. It is a symptom present in a variety of conditions. The causative factor in many of these instances has been discovered. In others the mechanism of the hypertension is still a mystery, in which event, we refer to the condition as "essential" hypertension. When we consider the rapidity of present day advances in this field, we can safely predict that few cases in the future will be so labelled. At the present time if we undertake to treat the symptoms of hypertension without studying each case separately for the underlying cause, we will often overlook serious lesions in the kidney, brain, endocrine glands and vascular system. Recent investi-

gators, moreover, have shown that a small percentage of these lesions may be successfully treated in their earlier stages.

Much has been written lately concerning the relationship between arterial hypertension and renal ischemia. It is assumed that toxic agents originating in the kidney as a result of ischemia find their way into the blood stream and are responsible for the prolonged vasoconstrictor state of the arterioles that leads to hypertension. Since this concept of the pathogenesis of arterial hypertension is now well established by the experiments of Goldblatt and his associates, the question arises: Can it be applied clinically? Do we have in the human kidney lesions capable of acting like the clamps on the renal artery of the experimental animal? It seems logical to infer that infections, abnormal positions and pathological conditions of the kidney may cause constriction of the renal artery to some degree. A glance at Table I shows the conditions in which interference with renal circulation either from intrinsic or extrinsic causes must be considered. A number of case reports have appeared in the literature in recent months, in which hypertension was relieved by the removal of tumors or masses compressing the renal artery or by nephrectomy when the kidney was the seat of advanced pyelonephritis, tumor or infarct. Since hypertension, if persistent, is nearly always attended by cardiac enlargement and vascular damage, the value of careful urologic study in these cases is evident. Urinary tract symptoms are just as important in the early recognition of this type of heart disease as joint pains, loss of weight and nose bleeds in the detection of the rheumatic state. Active treatment of chronic pyelonephritis may prevent the onset of the so-called malignant changes in some cases.

TABLE I—INTERFERENCE WITH RENAL CIRCULATION

I. Intrinsic.
  A. Bilateral:
    Benign Prostatic Obstruction.
    Bladder: Stone; Occlusion Ureters; Pyelonephritis.
    Bladder: Diverticula; Occlusion Ureters; Pyelonephritis.
    Bladder: Malignancy; Occlusion Ureters; Pyelonephritis.
  B. Unilateral:
    Pyelonephritis.
    Calculi.
    Contracted Kidney——— {Infection. Trauma.}
    Tuberculosis of Kidney.
II. Extrinsic.
  Unilateral:
    Malposition of Kidney.
    Abnormal Course and Position of Artery.
    Hydronephrosis with Pressure on Artery.
    Atheromatous Plaques.
    Infarct of Kidney.
    Thrombosis with Recanalization.

SURGICAL MEASURES

A number of surgical measures have been proposed in recent years for the relief of hypertension. Some attack the sympathetic nervous system, others the glands of internal secretion, while a third type attempts to improve the collateral circulation to the kidney by means of omentonephropexy. Needless to say, since the causes of hypertension are variable, these procedures cannot be considered equally valuable in any given case. While it is reasonable to remove the adrenal or perform an adrenal denervation when a renal tumor is present, the same procedure is not indicated in other cases in which the hypertension is caused by a humoral factor and not by excessive sympathetic stimulation. While improvement is reported quite uniformly by patients following section of splanchnic nerves and celiac ganglionectomy, the blood pressure in many returns to its original level in a few months. In these instances, the psychic effect of operation as well as the variations that occur in the natural course of the disease must not be lost sight of.

In children, especially, the presence of hypertension calls for prompt study of the urinary tract. Here the differential diagnosis between chronic glomerulonephritis and the

urologic conditions that respond to proper treatment must be made. Relief of urinary obstructive lesions and the active treatment of infection may be followed by striking results in these cases. The most favorable results are obtained in patients in whom symptoms are of relatively short duration and the hypertension recent.[15] Treatment, to be successful, must be carried out before the hypertension caused by renal ischemia of one kidney shows its effect on the other kidney by the development of arteriosclerosis. Caution must be used in advising the removal of a diseased kidney in the treatment of hypertension if the other kidney shows any diminution in its excretory function.

CARDIOVASCULAR SYPHILIS

The correlation of clinical and pathological findings in recent years has thrown much light on the nature of cardiovascular syphilis. The aorta, particularly the ascending portion, bears the brunt of the burden. Syphilitic myocarditis and gumma of the heart are now considered to be extremely rare. When the spirochetal shower takes place in the early days of the infection, the aorta is invaded, the vasa vasorum blocked, and ultimately medial destruction occurs. This early lesion defies clinical recognition. Although the wrinkling of the inner coat of the aorta that characterizes aortitis is easy for the pathologist to identify, its presence may only be suspected by the physician at the bedside. Forewarned of the nature of the cardiovascular changes in this disease, the careful clinician watches for signs of dilatation of the ascending aorta, aortic regurgitation, or a diffuse aortic dilatation without hypertension or aortic regurgitation. For the recognition of these early abnormalities in the aorta, we must admit that roentgen methods are indispensable.

Studies of large groups of patients by the various investigators have shown that adequate treatment of early syphilis prevents these cardiac sequelae of later life. In spite of this favorable outlook following prompt and early treatment, it is a sad fact that cardiovascular syphilis still accounts for about 12 per cent of all cardiovascular disease.

In former years frequent deaths were not unusual following vigorous treatment of luetic cardiovascular disease with arsenicals. We have learned that rapid healing of the lesions of the ascending aorta in the neighborhood of the coronary arteries may lead to dangerous reactions caused by the contractions of the scar tissue, thus limiting coronary blood flow. Arsenicals are never administered when the diagnosis of syphilitic cardiovascular disease is made or suspected until a preliminary course of treatment with bismuth and iodides has been given over a period of two to six months. Then only neoarsphenamine is used, and in small doses. Arsphenamine is contraindicated.

During the past decade the use of bismuth in cardiovascular syphilis has increased. Most clinics, after prolonged periods of observation on large numbers of patients, favor bismuth salicylate in oil. This preparation has a better therapeutic effect, a lower toxicity and a more prolonged action.[16] Lately investigations have shown that bismuth administered orally in the form of sobisminol is effective and has a definite place in the management of selected cases. The injection of bismuth, I believe, is to be preferred, since patients less often neglect treatment if the drug is used parenterally. Relapses are more common when the oral route is employed and the treatment placed in the hands of the patient.

CORONARY DISEASE AND ANGINA

In recent years many studies have been made in this important field of cardiology that have a decided influence on the therapeutic program. Mallory and his co-workers,[17] studying the speed of healing of infarcts, found that much depends on their size and position, as well as the state of the remaining myocardial circulation. Small infarcts heal in about five weeks. Larger infarcts are completely healed or undergo no discernible changes after two months. Rupture of the

heart through the softened area of infarction was found to be most common during the first week, may occur during the second week, but is rare thereafter. Much of the necrotic muscle of the infarct, Mallory and his coworkers report, has been replaced by connective tissue after the first two weeks. These studies are significant and should be kept in mind when we plan the period of bed rest following recent myocardial infarctions.

The observations of the pathologists concerning the mechanism of coronary artery occlusion should be of great interest to those who are in the habit of blaming a variety of environmental influences for their accident.[18] The microscopic analysis of the vessel points to the fact that coronary artery occlusion is an incident in the course of arteriosclerosis. Contrary to the popular belief, the right coronary artery is the most frequent seat of acute occlusion. Intramural hemorrhage from ruptured capillaries in the vessel wall is the common cause of acute occlusion (62.5 per cent). The formation of a thrombus on an arteriosclerotic plaque (37.5 per cent) is the second cause of sudden obliteration of the coronary artery lumen.

MYOCARDIAL INFARCTION

A careful study of any large series of cases of proved myocardial infarction will show that in a small percentage this accident takes place in the absence of pain, substernal oppression or angina.[19] In these instances dyspnea, sudden nausea and vomiting, fainting and collapse or vertigo are the symptoms that should arouse the suspicions of the examiner.

In the experimental animal heparin has been used successfully to prevent thrombosis of the coronary artery.[20] Since this drug has been proved to be non-toxic in purified form, the possibility of its more widespread use in man naturally arises. While a thrombus in the coronary vessel may form with great rapidity, the use of heparin may prevent the building up of intramural thrombi over the infarcted area and the complications that follow their dislodgement. The routine use of heparin postoperatively to prevent embolism and thrombophlebitis awaits the result of further research.

The importance of employing measures to improve the physiologic state of the myocardium following acute coronary occlusion has not been generally recognized. Oxygen is valuable in helping to restore the power of cardiac contraction,[21] and in aiding the restoration of glycogen storage following the accident. Oxygen therapy should be routinely employed in these cases in the presence of cyanosis or prolonged chest pain.

XANTHINES VALUABLE

The value of the routine use of the xanthines in the treatment of angina and coronary insufficiency has been long debated. It is true that this group of drugs increases the coronary circulation as much as 100 per cent in the experimental animal.[22] However, we cannot use this laboratory knowledge with as much confidence at the bedside. There are some clinicians who believe that continued use of xanthine preparations decreases the number and severity of anginal seizures. Others (and I share their viewpoint) have not found them to have this effect. Better results are obtained when the xanthines are used in the management of congestive cardiac failure. Even here they are inferior to the mercurial diuretics but may be used to advantage either in combination with the latter or to sustain the diuretic action in the intervals between the injections of the more active mercurial preparations.

Studies of the coronary circulation have shown the existence of numerous by-passes or collateral channels between these vessels. If a slow occlusion of the coronary vessel develops, these communicating branches enlarge and prepare to meet the emergency of subsequent obstructions. For this reason the resulting area of infarction may be insignificant. The wise clinician makes use of this knowledge in the treatment of his cases, permitting mild exercise preceded by the use

of nitroglycerin in order to mobilize in advance this collateral vascular network.

SURGERY IN HEART DISEASE

During the past decade we have witnessed the surgeon playing an increasingly important rôle in the management of various types of heart disease.[23] His rôle in the treatment of hypertension and in some cases of patent ductus has already been discussed.

Total thyroidectomy was first performed for heart disease in 1932, and we may now evaluate its usefulness by the results that have accumulated.[24] It must be remembered that total thyroidectomy was recommended for cases of congestive cardiac failure in which improvement by the usual medical measures was not either progressive or sustained when activity beyond bed rest was attempted. Cases of angina have also been selected for this type of operation when pain has not responded to the ordinary program of therapy. Consequently a very small group of patients, seriously ill with chronic disease, have been referred to the surgeon with the hope that some measure of relief might be obtained by removal of the thyroid gland, thus giving the heart less work to do by lowering basal metabolic requirements. The patients I have selected for total thyroidectomy have been few, but these few have done poorly. When rheumatic heart disease is the etiology, occasional cases show marked improvement. However, control cases on the improved medical regimé made possible by the advances of the past ten years do equally as well. At present I advise a medical regimé for every patient.

In the angina group we gauge the improvement of total thyroidectomy on the subjective symptom, pain. Consequently many of our impressions are unreliable since the suggestion supplied by the operation as well as the rest attending convalescence, often account for the marked improvement. However, in a very small group of carefully selected cases, total thyroidectomy offers a chance for more satisfactory relief from intractable angina.

The surgeon also comes to the assistance of the internist in the treatment of angina by alcohol injection of the rami of the sympathetic system in the upper thoracic region. Cervical sympathectomy may be tried if these injections fail.

Recently Beck[25] proposed that the problem of coronary disease be attacked by attempting to increase the collateral blood supply to the heart. In the experimental animal the blood vessels of a muscle flap carried from the chest wall to the surface of the heart anastamose with the branches of the coronary tree. The same operation may be successful when carried out in man if performed by a skilled surgeon. It is probably too soon to pass judgment on the limited number of cases that have been treated to date by this new method. Certainly in inexperienced hands it carries too high a mortality to be recommended for general use.

CARDIO-OMENTOPEXY

The operation of cardio-omentopexy proposed by O'Shaughnessy also has for its object the improvement of the collateral circulation of the coronary tree in cases of angina by bringing the omentum in contact with the heart wall. Here, too, the number of cases reported so far does not justify a widespread consideration of the method even for carefully selected cases.

As I have mentioned elsewhere today, the surgeon plays a prominent part in the salvage of a small number of cases suffering from congestive failure where the cause of the cardiac breakdown is thyrotoxicosis, constrictive pericarditis, purulent pericarditis or arteriovenous fistula.

The recent work of Beck has improved the prognosis in penetrating wounds of the heart. Today the physician recognizes the presence of acute cardiac tamponade in time to save by prompt operation and suture an increasing number of these cases. The principles guiding the surgeon in the successful manipulation and repair of the heart have been firmly based on laboratory observation.

Ventricular standstill or ventricular fibrillation are the mechanisms usually responsible for sudden death. When either occurs in a badly damaged heart, all attempts to restore coordinated contraction are futile. However, as Beck has shown, a normal heart that stops suddenly can be made to beat again. This accident may occur during operations as a result of the toxic effect of the anesthetic, hemorrhage or cardiac trauma, or may be produced reflexly by careless handling of the abdominal viscera. Animal observations have led the way to the first successful defibrillation of the ventricles of man.[26]

CONGESTIVE CARDIAC FAILURE

Any comparison of results obtained in the treatment of congestive cardiac failure prior to 1929 with present day records will show that a considerable prolongation of life is possible today. This can be attributed in great measure to the better control of edema through extensive use of mercurial and xanthine diuretics. With the diminution of prolonged congestion, the complications secondary to this condition (infection, embolism, pneumonia, infarction) are fewer. The first of this valuable group of mercurial diuretics (merbaphen, salyrgan, mercurin, mercupurin, salyrgan-theophylline solution) was discovered in the search for mercurial antisyphilitic agents. While the new preparations proved of no value in the treatment of lues, their potency as diuretics soon became known. Today the organic mercurial diuretics are numbered among the most valuable drugs in the physician's armamentarium, particularly when digitalization fails to remove all evidence of edema. The injection of a member of this group at carefully determined intervals (maintenance diuresis) adds to the comfort and length of life of many patients in the presence of a waning myocardial reserve. In the absence of pitting edema, the mercurial diuretics may have a decidedly beneficial effect on dyspnea. In those instances the diuretic extracts fluid from the engorged pulmonary capillary bed and increases vital capacity. Thus the dyspnea may be markedly improved and paroxysmal dyspnea attacks (cardiac asthma) prevented or their incidence lessened. These facts, I believe, have been insufficiently appreciated by the average practitioner. Often the judicial use of a mercurial diuretic enables the physician to discontinue the routine use of morphine for nocturnal seizures and substitute a mild sedative.

In some instances dyspnea of the asthmatic type may be the only sign elicited in the examination of the patient, and the question arises as to the presence or absence of heart disease with left ventricular failure. Response to adrenalin will not differentiate between cardiac and allergic asthma, and in some cases its use is not without danger. In these instances there is a valuable laboratory aid in arriving at the correct diagnosis. I refer to the determination of the circulation time. This test can be readily carried out at the bedside, does not require elaborate equipment and quickly gives reliable information.[27] A decreased blood velocity in the pulmonary circuit points to cardiac failure as the background of the dyspnea.

DIET IMPORTANT

The importance of diet during congestive failure has recently been emphasized. The amount and type of food ingested are important items that greatly influence the cardiac mechanism through their effect on the basal metabolism. Under nutrition in normal persons has been shown to be accompanied by a fall in the pulse rate, blood pressure and metabolic rate. These alterations follow a slight weight loss and appear even though the usual activities are unrestricted. If we bring about similar physiologic alterations during convalescence from congestive failure, we greatly aid cardiac recovery. Consequently, restriction of the diet for the first two or three weeks of the patient's convalescence is helpful. Proger[28] advises first a severe and then a more moderate dietary restriction over this period so that about 10 per cent of the

patient's body weight is lost. This temporary regimé of under nutrition often produces a slowing of the pulse beyond the degree obtained by bed rest and digitalis. The heart has less work to do at a lower metabolic level and as weight is lost, vital capacity increases. Some cases also show a decrease in cardiac size.

Although there is still much to be learned about digitalis, recent years have added a great deal to our knowledge concerning its action. The trend appears to be away from the use of a multiplicity of preparations of this drug. Many clinics for economic reasons during the present national emergency have adopted the tablet of the powdered whole leaf for routine oral use. The only disadvantage in using this preparation in all cases is the latent period of from two to five hours before any clinical effect is noticeable. In occasional cases of sudden congestive failure in which digitalis has not been prescribed previously, treatment may be begun by giving .5 mg. (five cat units) of ouabain intravenously at the time digitalis whole leaf is begun by mouth. The action of ouabain is rapid (five to 25 minutes), and the drug is eliminated quickly. This combined use of ouabain and digitalis whole leaf eliminates the disadvantages of both drugs.

The vast majority of patients seen in practice are able to take digitalis by mouth. Seldom does the occasion arise where other routes must be used temporarily. The tablets, pills, or capsules of the whole leaf of digitalis have proved to be superior to the tincture.[29] The former maintain their strength, the dosage is accurate and they are more convenient than the tincture.

The vomiting produced by digitalis is not the result of the action of this drug on the gastric mucosa as is commonly believed, but is a reflex effect that follows the direct action of the drug on the heart. The impulses arise in the heart and pass directly to the vomiting center in the medulla. Therefore, the nature of the digitalis preparation served by the manufacturer does not account for the absence of nausea and vomiting, as is so often claimed. In the average case about 18 grains of digitalis whole leaf are required to digitalize. The patient needs a daily dose of one to two grains to maintain this effect, the exact dose depending on the amount of the drug eliminated each day. Clinical trial usually determines the correct dosage in each instance. The speed of administration of the required amount of digitalis depends on the clinical picture. In emergencies the full amount may be given in 24 to 36 hours. In routine digitalization, particularly in older people, it is better to give the full amount over the course of a week to ten days.

CARDIAC ARRHYTHMIAS

Following the widespread use of graphic methods our knowledge concerning the diagnosis and treatment of the cardiac irregularities has increased rapidly. The electrocardiograph has augmented the interest of the practitioner in these conditions. As a result of the study of these records at the bedside, he soon finds that he can make the diagnosis in the great majority of cases without instrumental aid.

Extrasystoles or premature beats are the most common of all cardiac irregularities. They often accompany organic heart disease, but they are also seen in nervous, apprehensive patients who have no signs of heart disease. Treatment depends on the findings in each individual case. For example, frequently recurring premature beats may be present during the early stages of cardiac failure, in which event, digitalis may improve the cardiac status and abolish the arrhythmia. On the other hand, the use of digitalis may in itself cause the arrhythmia to appear for the first time in some cases. Here proper regulation of the dose of the drug will control the premature beats. In nervous patients who have no evidence of heart disease, where the irregular rhythm causes discomfort, quinidine sulphate is the drug of choice. It may be given every four hours in three to five grain doses provided an initial dose of

three grains causes no symptoms suggestive of drug idiosyncrasy. Meanwhile search for the cause in the patient's daily regimé should be continued. Tea, coffee, tobacco, overwork, loss of sleep, and infections should be eliminated.

USE OF QUINIDINE SULPHATE

Many remedies continue to be suggested for paroxysmal auricular tachycardia. This arrhythmia occurs quite often in the absence of heart disease. Its onset and offset are abrupt and its duration a few seconds to a few hours. The cardiac rate during the paroxysm is between 150 and 200 a minute. Pressure over the carotid sinus may terminate the episode, and this procedure is always worthy of a trial before drugs are used. Quinidine sulphate is, in my opinion, the safest drug to use in the treatment of paroxysmal auricular tachycardia. If the patient gives a history of infrequent seizures of short duration, the nervous symptoms that accompany the episode may be treated by the administration of a mild sedative and the attack may be expected to terminate spontaneously. For severe spells of long duration, mecholyl, a powerful parasympathetic stimulant, has been recommended. It is given in 15 to 20 mg. doses—always subcutaneously. I have found that the side effects of this drug (flushing, perspiration, salivation, nausea and occasionally collapse) are more annoying to some patients than the paroxysm for which it is given. Administration of 1/100 grain of atropine sulphate intravenously will promptly abolish the effect of the mecholyl. Some authorities recommend the use of emetics in the treatment of paroxysmal auricular tachycardia, like wine or syrup of ipecac. The vomiting in some instances stops the paroxysm by the vagal activity it produces, but I consider the use of ipecac in the doses recommended a rather violent therapeutic procedure in these cases.

Paroxysmal ventricular tachycardia usually accompanies advanced myocardial disease, and the possibility of the subsequent development of ventricular fibrillation makes it a dangerous mechanism. In the treatment of paroxysmal ventricular tachycardia quinidine sulphate in 10 to 15 grain doses every three hours is the drug of choice. In emergencies quinine hydrochloride may be used intravenously, but the injection should be given slowly.

Auricular flutter may appear in normal hearts, but it is more apt to be met as a complication of rheumatic or hypertensive heart disease. In the presence of cardiac damage digitalis is the safest drug to use, since it controls the ventricular rate by producing auriculoventricular heart block. In some instances the flutter may continue in the auricular musculature, but the brake is maintained on the ventricles by the continued administration of digitalis in maintenance dosage (usually one and one-half to two grains of the whole leaf daily).

Even auricular fibrillation is today not regarded as evidence in itself of heart disease. It may occur in paroxysms in the absence of cardiac damage, but in these cases hyperthyroidism should always be ruled out. If there is no cardiac enlargement or evidence of thyrotoxicosis, the paroxysms of fibrillation may be satisfactorily controlled by the use of quinidine. In the presence of heart disease, particularly the rheumatic type with auricular hypertrophy, digitalis is the drug of choice. It should be given in full amount to control the ventricular rate and then continued in maintenance dosage. It is now the consensus of opinion that no attempt should be made to restore normal rhythm by the use of quinidine in old fibrillators who have advanced heart disease of the rheumatic or hypertensive types.

DIGITALIS IN PARTIAL HEART BLOCK

The results of recent studies show that digitalis may be safely given to patients with partial heart block if indicated.[30] While it is true that both digitalis and organic heart disease each result in interference with auriculoventricular conduction, these factors do not

reinforce each other. If congestive failure develops in a patient with preexisting partial heart block, therefore, digitalis in full therapeutic amount may be prescribed.

The proper management of Adams-Stokes attacks that complicate complete block depends on the electrocardiographic findings at the time of the attack. When ventricular standstill causes the cerebral anemia and syncope, the treatment consists of the intramuscular injection of one-half of one cc. of a solution of epinephrine hydrochloride U.S.P. between attacks to stimulate the idioventricular center. While a life-saving measure in the presence of ventricular standstill, epinephrine may be actually harmful if the prefibrillary type of ventricular tachycardia or ventricular fibrillation are present during the seizures. These abnormal rhythms are evidence enough of the irritability of the tissue. An accentuation of this state by the introduction of epinephrine is contraindicated, since this drug in the laboratory animal has been shown to produce or prolong ventricular fibrillation which is synonymous with death.

THE SOLDIER'S HEART

With the world again at war, neurocirculatory asthenia or effort syndrome once more becomes a major problem. Recent studies have failed so far to determine the etiology of this disabling condition. In many recruits a well marked constitutional factor is present; some have long, narrow chests with visceroptosis; while in others who seem strong and healthy, psychic or nervous factors precipitate the symptoms. In a third group, infections like tuberculosis and influenza form the etiologic background.

Neurocirculatory asthenia may be viewed as a common chronic affliction of sedentary town dwellers who are poor constitutional types. The characteristic symptoms are produced by excessive activity of the training period. The similarity of these symptoms (breathlessness, tachycardia, chest pain) to those produced by excess of adrenalin has led some to claim that the condition is caused by a disorder of the adrenal sympathetic nervous system. Surgical attack has been recommended as a solution of severe cases by these observers.

Management of neurocirculatory asthenia in the light of our meager knowledge concerning etiology consists in first ruling out an organic heart lesion, tuberculosis and hyperthyroidism. Mild graded exercises in the open air and not bed rest form the backbone of the therapeutic program. The prognosis is excellent as far as life is concerned, but recurrence under stress is the rule. Recruits who give a history or show evidence of the presence of this condition should not be accepted for active service.

PERIPHERAL CIRCULATION

So much attention has been centered on the heart that it was not until recent years that the peripheral circulation received the attention it deserved. We now recognize that the peripheral circulation may fail under a variety of circumstances: acute hemorrhage, reflex or psychic disturbances or following the action of substances like histamine on the vessels. The symptoms that ensue consist of weakness, vertigo sometimes followed by syncope and in severe cases unconsciousness. Fall in body temperature and sweating take place but no dyspnea appears. The patient has a grayish color, a rapid feeble pulse, a decreasing blood pressure and is able to be flat in bed. Inspection reveals that the veins of the neck are not engorged.

These symptoms may be caused in a variety of ways. For example, less blood may be returning to the heart owing to a decreasing venous pressure; consequently the output of the heart will be reduced. A diminished blood pressure may also result from the vasodilating influences of various substances acting directly on the peripheral vessels or on the controlling mechanism in the central nervous system.

It is essential to recognize peripheral failure when it is present and thus avoid prescribing unnecessary treatment for the heart. This is all the more important since recent

investigations have pointed out that digitalis may actually be a harmful drug in the treatment of peripheral circulatory failure secondary to acute hemorrhage, since it still further decreases cardiac output. Therapy consists in control of the causative factor, consequently transfusion of whole blood to increase blood volume is the procedure of choice.

In acute infectious diseases a similar picture of peripheral failure may appear where there is a progressive decrease in cardiac output secondary to the pooling of blood in the relaxed peripheral vascular bed. Control of the infection by chemotherapeutic agents before this picture develops is the aim of modern therapy. However, when peripheral failure does occur, transfusions are indicated to raise the blood volume, while at the same time caution is used in administering vasoconstrictor drugs such as adrenalin, ephedrin or pituitrin, since these preparations may accentuate the condition by aggravating the tissue anorexia. Cardiac stimulants are of no avail and may do actual harm, since the heart muscle in this type of failure is unimpaired.

The aim of all therapy directed toward the peripheral circulation in chronic obstructive conditions is to relieve pain and to promote, if possible, the development of a collateral circulation.

RECENT STUDIES

The treatment of diseases of the peripheral arteries in recent years has been advanced by a number of studies. It has been shown that the symptoms of arterial insufficiency in the extremities are similar regardless of the etiology. The value of rest in the treatment of these conditions has received increasing emphasis. Studies in the use of local heat reveal that the most effective temperature is 95 degrees F. Higher temperatures, that are commonly employed in heat cradles, have been found to cause increase in pain by inducing secondary spasm. Any apparatus that disregards this basic principle may be very dangerous to the patient.

Various drugs have been recommended in peripheral vascular disease for their vasodilating powers. Papaverine hydrochloride in one-fourth grain doses intravenously works well in emergencies caused by peripheral artery thrombosis.

Acetyl-beta-methylcholine has been useful in the hands of some investigators in treating vasospasms. It probably is at its best when used by iontophoresis.

In chronic occlusive diseases, particularly in the presence of rest pains, further studies have shown the value of the injection of typhoid vaccine (20 million intravenously) in increasing blood flow and relieving symptoms. Some good results are also obtainable by the intravenous injection of various hypertonic solutions. Three to five per cent solutions of sodium chloride in amounts from 100 to 300 cc. two or three times a week are given with good results in some clinics. Others prefer to use calcium salts (300 cc. of a two per cent calcium chloride) and claim a better vasodilating effect. Intravenous injections of these solutions are valuable in the management of claudication as well as night cramps and rest pain. They are easy to give and relatively inexpensive.

Of the mechanical measures that are appearing on the scene in great numbers these days, the suction pressure glass boot has been the most popular. It is used in moderately advanced cases of arteriosclerosis, and great benefits are claimed.

VENOUS OCCLUSION APPARATUS

The intermittent venous occlusion apparatus reintroduces an old principle of treatment. Obstruction of the venous flow liberates a histamine-like substance that accounts for the subsequent vasodilatation and the improvement that takes place. Oscillating beds that alternately elevate and depress the extremities, thus imitating the original Buerger's exercises, are now on the market.

As a result of the many recent advances in the field of peripheral arterial disease, fewer amputations are necessary. The

surgeons are now directing their energies toward operations on the sympathetic nerves in attempts to relieve spasms of vasoconstrictor nature. The earlier recognition of embolic accidents has led to better results following embolectomy.

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Dangers of Gold Treatment

Another warning against the indiscriminate use of gold treatment is made by *The Journal of the American Medical Association* for August 2 which says:

"Inquiries which come to *The Journal* and to the Council on Pharmacy and Chemistry indicate that promotional activities for the use of gold preparations are not quiescent. Gold preparations have been offered for oral, intramuscular, intravenous and topical use, the latter as a nasal instillant, gargle, paste, cream or suspension. * * * An example of the exaggerated and misleading claims not infrequently encountered is cited in a report by the Council on Pharmacy and Chemistry. This report relates to a colloidal gold preparation promoted for therapeutic use in the treatment of cancer.

"The dangers of chrysotherapy make it evident that this type of therapy should be undertaken only by those who have had extensive experience and who are fully aware of the dangers."

The Journal goes on to enumerate some of the untoward reactions which have been reported. These include such conditions as a generalized inflammation of the skin, ulceration of the mouth, stomach and the upper part of the intestines.

HEAD INJURIES: EXTRAGLOBAR FACTORS INFLUENCING VISION*

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In this age of highly mechanized industry, motor travel and the aeroplane, a large number of head injuries occur involving the visual apparatus. For the purpose of delimiting this paper, injuries involving the globe itself are omitted. The subject matter will deal with several types of injuries involving structures other than the globe, yet at times directly or indirectly involving the globe and its contents. No attempt has been made to cover the literature on the subject. Consideration is given to case histories dealing with the subject and an attempt will be made to point out what might be regarded as errors in treatment and to consider more fully the proper management of such cases. It is hoped that the points herein developed will be of interest and help not only to the oculist and the ophthalmologist but also to the surgeon and the general practitioner.

Of the lesser injuries, penetrating wounds of the lids by either metallic or wooden objects can become complicated, although appearing minor on inspection. The following case is illustrative:

Mr. W. V. S., (No. 18011), while driving a bushing out with a drift pin, suddenly noted a sharp pang in the right eye and felt something hit, followed by pain. He was seen by his family physician, who took the patient to a dentist's office and had one x-ray film taken. The plate revealed a metallic foreign body. Since the patient had no difficulty in vision, the wound of penetration was opened widely and a search made for the foreign body. It was not recovered and the patient was referred for further help. Examination with x-ray localization showed a metallic foreign body, extraglobar, situated in the posterior temporal third of the orbit. The sinus tract made by the foreign body had been completely obliterated by manipulations before the patient was first seen in consultation.

What might have been a relatively simple procedure, the removal of the foreign body by the route of entry, following the sinus tract, turned out to be a very complicated one. Had adequate x-rays been made before any manipulation was tried, the exact location of the foreign body would have been revealed.

Case No. 19859 illustrates another type of injury extraglobar which, although infrequent, is not rare, and in our practice has been seen on four occasions. In a fight this patient lost the inner half of the upper lid, and the inner two-thirds of the lower lid, with resultant loss of both punctae, loss of cilia and exposure of the cornea in normal positions. While considerable plastic surgery can replace the lid structures to the point where corneal protection will result, no plastic surgery will restore the punctae or functioning musculature of the lids. A plea is made here to save all tissue in lid injuries, and to debride only such elements as are absolutely necessary, since in reconstruction small tags may be utilized with better cosmetic results than grafted tissue.

The judicious treatment of burns about the lids and approximate areas will result in less scar tissue and disfigurement.

For repair of lid lacerations and surrounding structures where contractions are probable, it is suggested that silk sutures be used

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instead of skin clips. Careful approximation with fine, interrupted silk, removed as soon as sufficient healing has taken place, has, in our hands, proved the method of choice. All cases of laceration of the lids demonstrate proof of sufficient trauma to warrant a careful fundus examination, for in our practice one such case presented a tear of the retina.

WOUNDED LIDS

In the case of penetrating wounds of the lids, an x-ray is essential. Glass or wood may at times be detected by minor changes in soft tissues. A careful search for glass and splinter particles should be made. To take for granted that these particles are not here because they do not present at the wound edges may later prove embarrassing, both in the office and in court.

Wounds involving the extraocular muscles causing either a paresis, paralysis or severance of the muscles need early attention. Severed muscles should be approximated at once or as early as feasible. A paresis should be protected, the eye put at rest, syphilis ruled out, and follow-up made at intervals compatible with the particular case. A similar course may be followed in paralysis. In both instances infectious background should be eliminated. The following case will illustrate this point:

J. K., (No. 2035), a retired engineer, presented with a ptosis of the right upper lid, with a history of mild trauma. Investigation showed an acute left maxillary antrum. As the antrum cleared, the ptosis improved and in six weeks full function had returned. A recurrence two years later "following an attack of influenza", likewise cleared, but instead of six weeks about four months were required for full motion and function to return.

Injuries of the orbital canal may cause serious damage to vision.

M. S., (No. 3151), age 17, was in an automobile wreck and received a skull fracture with blindness in the left eye, although there was no injury to the globe. He was seen ten days after the accident. Study, including x-ray, revealed a fracture of the floor of the orbit, a shelf of the orbital canal being displaced and partially occluding the canal. Operative procedure was carried out. The bony fragment was located easily and removed with difficulty. Following removal, however, there was no improvement in vision and the nerve head gradually became atrophic.

Here one asks the question: Could vision have been saved had this patient been operated upon immediately after the accident?

A second case illustrates the point more conclusively.

M. J. B., (No. 19156), blind in the left eye, was in an automobile accident January 9, 1941. Immediately upon regaining consciousness a few hours after the injury, he reported he could not see out of the right eye which previously had been normal. He was not seen by an ophthalmologist until January 25, sixteen days after the accident. Examination showed a recent fracture of the frontal area of the skull extending into the orbit. The globe was free from injury, but the optic nerve head showed second degree atrophy. It was felt any operative procedure would be futile. This opinion was confirmed by consultation at a large, well-known eye clinic.

Here a plea is made for earlier ophthalmoscopic examination, in order that such cases may have every benefit of the doubt and that the harmful results of delay may be avoided.

FRACTURES OF THE NOSE

Cranial fractures involving the nose, with secondary involvement of the lacrymal sacs and nasolacrymal ducts, are not uncommon. We see several cases a year of this type of injury, with epiphora the main symptom. In checking over these cases it is astonishing how frequently nothing is done to set a broken nose at the time of the injury. Later when epiphora is complained of, these cases are referred to the ophthalmologist. Usually the time elapsed since the injury is weeks or months. Uniformly the nasal asymmetry tells the tale on simple inspection. Palpation gives further evidence of latent fracture and maladjustment. Passage of probes or fluids tells a story of obstruction, while mucoid secretion tells of chronicity in the mucous lining of the tract. Although all cases will not be cured by early setting of this type of fracture, certainly a large number will be cured and

saved endless trouble or later operative procedures.

In this same class of injuries, those incidental to plastic surgery of the nose should be mentioned. Recently in conversation with a well-known plastic surgeon, the question was asked as to the frequency of injury to the sac or nasal lacrymal ducts. While no figures could be given, it was an admitted fact that such trauma must be considered in a serious light.

Crushing injuries of the facial bones or skull are seen not infrequently. We have been impressed in several recent cases.

D. C., (No. 15175), was injured in a slate fall, receiving multiple fractures of the right side of the face including all bones of this area. There were fractures of the sphenoid and frontal and parietal plates with resultant flattening of the right side of the face. Deafness of the right ear and blindness of the right eye resulted. The patient was seen in consultation four days after the accident. At this date there was no light perception in the right eye. The patient entered the hospital in profound shock and manipulation of the fractures was not considered a wise procedure. Recovery with retirement from industry was a normal sequence. This patient now owns and runs a small farm.

A live patient with one useful eye is preferable to a successful operation and exitus.

Case No. 18439 illustrates another type of injury in which fairly good vision was retained but poor cosmetic results were obtained.

Mr. M. O. was hurt in a slate fall, with a crushing injury to the right side of the face. Following healing the right eye was fully one cm. lower than the left, due to multiple fractures of the orbit. Vision uncorrected was 20/200 right eye, 20/40 left eye; corrected vision, right eye 20/50, left eye 20/25. However, with correction there was confusion and diplopia. With the malalignment present, this can be readily understood. It is felt that had this patient's fractures been properly set following injury, at least far better cosmetic results would have been obtained and the deviation which measured 20 degrees would have been less. The patient's one complaint of extreme dizziness would, in all probability, have been less marked. This man is now unable to work and is a total industrial loss. Extensive plastic repair would be necessary to rehabilitate. Since the outcome of repair work would be doubtful and since the patient views such procedure with a pessimistic attitude, the probability is that he will remain a total loss to industry.

Attention is directed toward another type of injury, within the skull, yet directly affecting vision.

R. W., (No. 9233), was injured April 27, 1935 in an explosion, with resultant concussion. There was considerable debris of both corneae, but these cleared rather rapidly following debridement of many fine particles. Central vision was markedly reduced, being 20/50 right eye and 20/200 left eye. It was felt after study with neurological examination and x-ray that a subdural hemorrhage was present, but the neurologist advised against removal of the hemorrhage. Today the patient exhibits a picture of optic atrophy, with vision in the right eye 20/70 and left eye 10/400 not improved with lenses.

One might well ask the question: Could better vision have been retained had the hemorrhage been removed?

This next case, although rather unusual, is worthy of mention because of the angles involved.

Mr. C. E. S., (No. 16754), presented September 25, 1939 with a history of having had an alcoholic injection of the Gasserian ganglion for tic douloureux. Following the injection, there developed a ptosis of the left upper lid, left facial paralysis and subsequent trophic ulcer of the left cornea, which in spite of all treatment finally covered three-fourths of the cornea. At no time was there any gross infection present. Today the facial paralysis and ptosis have disappeared, but the resultant leucoma of the cornea covering the central third of the cornea persists. The alcoholic injection was done by one whose qualifications are beyond question. The patient had refused surgery for the tic douloureux. The picture presented, with results, demonstrates the fact that a simple procedure carries certain hazards which cannot be disregarded.

SUMMARY

1. Every head injury, no matter how trivial, warrants a complete ophthalmic examination.

2. Injuries about the eye, although apparently not involving the globe, warrant a thorough examination.

3. Severe facial injuries should receive early reconstruction work where feasible.

4. Injuries to the optic canal producing pressure should receive immediate aid to relieve that pressure, if such relief is possible.

5. Intracranial hemorrhage of the occipital lobe should be drained surgically if hemorrhage is sufficient to produce symptoms.

6. Injection of the Gasserian ganglion for the relief of tic douloureux is done not without certain risks.

RUPTURED UTERUS*

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RUPTURED uterus is a dramatic and frequently fatal complication of pregnancy and labor and is one which, fortunately, is seldom seen, but, when it does occur, constitutes one of the most serious conditions which can beset the expectant mother. Recently several unusual cases have been admitted to our clinic and these prompted the preparation of this paper.

The material used in this paper was collected from the records of the University Hospital and the Baltimore City Hospital, both of the services being under the same head and the treatment of cases being quite similar.

There were 51,571 cases reviewed and 34 cases of ruptured uterus were found. This is an incidence of one in every 1,516 cases, which is a somewhat more frequent occurrence than either Sheldon or Selsey report, but it must be pointed out, that both our hospitals accept many patients who may have been either neglected, or mismanaged, and therefore it would be expected that the number of cases of ruptured uterus would be increased.

The average age of the patients having rupture of the uterus was 33.0. The youngest was 19 and the oldest 48. The average parity was 4.67, there being two primigravidas in this group, and six had been pregnant only once before. The greatest number of children any woman had had in this series was twelve. Rupture occurred in 19 colored, and in 15 white women. This figure does not imply that rupture occurs more frequently in the colored race, because, over the period of time that these cases were collected the number of colored admissions was the greater of the two.

The cases were divided into two groups, namely, complete rupture where the peritoneal cavity was invaded, and the incomplete rupture where the muscle was torn but the peritoneal covering remained intact. There were 30 cases of complete rupture and four cases of incomplete rupture of the uterus. The total maternal mortality for the series was 50 per cent, there being 17 deaths in the complete rupture group, and none in the incomplete group. The fate of the baby is not very promising. In our series of cases all the

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infants in the complete rupture group were stillborn except one, and that infant died on the second day of life due to intracranial hemorrhage following an internal podalic version and breech extraction. There was one fetal death in the incomplete group making the total fetal mortality 91.17 per cent.

It is interesting to note that all the cases studied were single pregnancies. The duration of pregnancy was variable, there being 29 patients who were at term, two who were 36 weeks pregnant, one who was 24 weeks pregnant, and in two incidences the duration of pregnancy was not stated. The presentation seemed to have some bearing on the occurrence, there being 19 cases of vertex presentation, five breech presentations, five transverse presentation, one brow presentation, and in four of the cases studied the presentation was not designated.

INTERNAL PODALIC VERSION

The most common etiological factor concerned in the production of ruptured uterus in this series was internal podalic version and breech extraction, as there were 11 such cases. It might be fitting here to quote DeLee's closing remarks on the subject of version which are: "The danger of rupture of the uterus during version cannot be too strongly emphasized." The indications for this procedure in these cases were as follows: three for prolonged labor, three for prolapse of the cord or arm, two for abruptio placentae and one for placenta previa marginalis. In two of the cases the indications could not be determined. The second factor was previous cesarean section of which there were nine. Three of this number were of the classical type. The indications for the previous sections were: three for cephalopelvic disproportion, one because the birth canal was blocked by an ovarian tumor, one for placenta previa, one for abruptio placentae, one for eclampsia, one for fulminating preeclampsia and the reason for section in one case was not stated. It is interesting to note that in four of the cases the patients were not in labor at the time the rupture occurred. Two of these patients were at term, one was 36 weeks pregnant and the fourth was only 24 weeks pregnant. The third factor was the use of pituitary extract. There were eight such cases in this series, two of which received the drug intranasally and the rest by hypodermic injection. The amount of drug given was impossible to determine as most of the cases received the medication before being admitted to the hospital. The indications for the use of the pituitary extract was for the same reason undeterminable. Intrauterine manipulation such as attempted high forceps, and destructive operations were responsible for three of the ruptures. The indications for these procedures were a prolapsed arm and a Bandl's ring, a shoulder dystocia, and a brow presentation. In the remaining three cases there was no apparent cause for the rupture. One of these cases was at term, and was not in labor at the time the rupture occurred; in fact, the patient was up and about her home for several days after the rupture had occurred. In two cases of complete rupture it must be stated that the patients had a history of previous section, and were given pituitary extract.

The site of rupture in all cases with a history of a previous section, was found to be through the scar. This is also true of the incomplete group, where there were two cases delivered previously by section. In the remaining cases without a history of a uterine scar, the ruptures were located as follows: two incomplete ruptures were located in the lower uterine segment, sixteen of the complete rupture group were found to be in the lower uterine segment, two were located in the fundus, and in four cases the laceration was so extensive that it extended through the entire uterus. Most of the ruptures occurred on the lateral surface of the uterus, although there were several cases where the laceration was found along the midline either anteriorly or posteriorly. The location of the rupture did not seem to alter the mortality rate,

or the treatment, in this series of cases.

Several years ago C. E. B. Richards made a study of ruptured uterus following cesarean section, and classified them into various types. In the first group, which is most common, the rupture is through the old upper segment scar with the placenta away from the site of rupture. The rupture occurs early in labor, and there is little or no hemorrhage. The prognosis is good if suitable treatment is available. The second group is likewise through the old upper segment incision, but the placenta is situated under the scar. Here the rupture is gradual, and tends to occur at the end of pregnancy, giving rise to a tender uterine scar. After labor begins hemorrhage occurs and is usually severe. The prognosis in this group is not favorable. In type three the rupture occurs through a lower uterine segment scar. The bleeding may be severe if the laceration extends laterally through the uterine vessels. The prognosis in this class depends on the amount of blood lost. The fourth group is through the old upper segment scar with the child and membranes expelled from the uterus, with the placenta remaining in situ. Here the hemorrhage is not marked, and if treated quickly, the prognosis is good. In the final group the child and placenta are extruded from the uterus through an old upper segment scar. Here the hemorrhage is profuse and the prognosis is grave.

DIAGNOSIS

The diagnosis of ruptured uterus is as a rule very simple, the classical signs and symptoms being a severe tearing pain in the abdomen followed by cessation of painful uterine contractions, shock with signs of concealed hemorrhage, absence of fetal heart sounds and fetal movements, and change in the contour of the abdomen. The atypical cases, however, are frequent enough to spend some time discussing them. In this series there were six such cases. The following case history is presented to show some of the pitfalls in diagnosing a case of ruptured uterus.

Mrs. M. R., No. 38074, a 41-year-old white unregistered para eight, was admitted to the hospital on November 24, 1940, being referred to us by a family physician. Her past and family histories were non-contributory. The history of systems was negative. Her prenatal course was entirely uneventful. Her last menstrual period was February 28, 1940, and the estimated date of confinement was December 25, 1940. Her past obstetrical history revealed that the patient had had eight full term pregnancies, all terminating without incident, except the last one which was complicated by prolonged labor, and ended in a difficult breech delivery of a large stillborn infant. The patient fell into spontaneous labor in the morning of November 24, 1940, at which time she was seen by her physician who found her to be in early labor and progressing normally. The fetal heart could not be heard due to the obesity of the patient. At 3:00 p. m., November 24, 1940, because the patient was progressing slowly, he gave her four doses of three minims of pitocin at hourly intervals. The first two doses increased the pains, but after this the pains subsided, and the following doses were not effectual. At this time the attending physician thought the cervix to be almost fully dilated, and the head well down in the pelvis, and that delivery could be accomplished by forceps. This was attempted without success. The patient was then sent to this hospital. Examination on admission revealed an obese white female, who appeared to be in good condition and in no particular distress. The heart was negative, blood pressure 130/80 and the pulse was 88. Chest was negative except for a few râles over both bases. The respirations were 20. Examination of the abdomen revealed slight epigastric distention, but there was no tenderness or rigidity. A mass which corresponded to a term uterus could be palpated, and the head was thought to be engaged. Rectal examination revealed the cervix to be seven cms. dilated, and the head was two cms. above the spines, in the L.O.T. position. The fetal heart could not be heard. At this time a diagnosis of ruptured uterus could not be made. The patient was watched for 24 hours during which time her pulse and blood pressure varied very little. Her abdomen became progressively more distended and somewhat tender. From the time of admission no uterine contractions could be felt. The patient's face became drawn and anxious, and her general appearance was one of distress. It was

thought that an exploratory laparotomy was indicated at this time. The abdomen was opened, and a large rent was found in the lower uterine segment, including the cervix on the left. The body of the child had been expelled from the uterus, but the head was held down in the pelvis by the contracted uterus, around the infant's neck. A supracervical hysterectomy was done with some difficulty. The patient made an uneventful recovery, and was discharged in good condition on her fifteenth day.

The history of this patient's labor and the administration of pituitary extract spells ruptured uterus with capital letters. Examination of the patient, with the history in mind, was confusing, especially the slow pulse and the constant blood pressure, and the patient's general well being. After careful consideration the possibility of ruptured uterus was practically eliminated. The patient was seen by two senior attending obstetricians, who also were not convinced that the patient was suffering from a rent in her uterus. A senior attending surgeon saw the patient twelve hours after admission, and was of the opinion that the patient had no peritoneal irritation. Even at the time of the laparotomy there was some doubt in everyone's mind as to what the findings would be, but it was thought that the patient's condition warranted exploration. It is almost unbelievable that anyone could have such a large tear in her uterus and could appear so well. This points out the fact that some women can have major obstetrical accidents without corresponding signs.

Another case to emphasize our claim of the difficulty in diagnosing some of these cases, is the case of a 27-year-old para three, who apparently ruptured her uterus several days prior to admission, and was up and about carrying on her household duties, and came to the hospital only after her abdomen became swollen and tender.

The treatment of this catastrophe is definite. After the diagnosis has been made, no time should be lost in instituting active treatment. The shock, which is usually profound, should first be combated before any operative intervention is attempted. This should be done ideally with large blood transfusions, but if no compatible blood is available, the use of plasma or hypertonic glucose solution should be started at once. Only after the shock has been treated can the patient be explored with any hope of a satisfactory result. The procedure of choice is a rapid but careful supracervical hysterectomy, under general anesthetic. Care should be taken to insure hemostasis and peritonealization of the cervical stump. Drainage of these cases is not necessary, unless the patient is known to be infected, and then it is desirable to drain through the cervical stump. If, however, the patient's condition is such that an extensive procedure such as hysterectomy is deemed unsafe, the only other satisfactory method of treatment is quickly to suture the rent in the uterus, and then do one of the simpler sterilizing operations. Here again hemostasis should be maintained.

MORTALITY REDUCED

An interesting observation which we made while reviewing this series is, that since the blood banks have been instituted at both hospitals, the mortality from shock in ruptured uterus has been markedly reduced. During the period prior to these banks there were 15 cases of rupture with seven deaths due to shock, in contrast to 19 cases after their establishment with only four deaths from the same cause. This is a gratifying improvement in the treatment of this major complication.

Ruptured uterus, as every one agrees, is a serious complication of pregnancy and labor, and every effort should be made to prevent its occurrence. As shown in these statistics, internal podalic version and breech extraction is one of the main causative factors in rupture. This operation is very rarely performed in these clinics at present. External version without anesthesia in transverse presentations has proven very satisfactory, and is almost always attempted before intrauterine manipulation is done. The indications for the pro-

cedure of internal podalic version in other cases is extremely rare. In this we feel we are removing one of the causes of ruptured uterus. Routinely after all internal podalic versions and breech extractions which may be necessary we inspect the cervix and lower uterine segment for any tears or ruptures, and if found these are treated at once. It is a known fact that the uterus which has a scar in it, is much weaker. Therefore, close supervision of a woman with a previous section is indicated both during labor and the latter months of her pregnancy. All these women must be delivered in the hospital where proper facilities are available for immediate section should rupture of the uterus occur or appear to be imminent. The indications for the previous sections should be carefully restudied and if they again present themselves, elective section should be planned. The low cervical section should be done not only because of the lower mortality but also these scars are not as prone to rupture as are those of the classical type.

The number of children a woman should be allowed to have after once having a section is a matter which should be seriously considered. At this clinic, we feel that two or three future pregnancies is an indication for sterilization, and this is offered the patient. Any multigravida with several live children, who comes to section, is usually sterilized at the time of operation. Here again we feel we are eliminating a certain number of future ruptures of the uterus.

The use of oxytocics during normal labor cannot be too strongly condemned. DeLee is very emphatic in objection to the use of pituitary extract, save in a small group of indicated cases. We are in full accord with his statement, as most of our cases of ruptured uterus, due to the use of an oxytocic, were in women whose labor was slow but otherwise normal, and whose physicians thought that a small amount of this drug would safely hasten the delivery. We have all seen this same situation and have yielded to its temptations with good results most of the time, but it is the occasional catastrophe which makes it too dangerous a drug to be used without indication.

Good prenatal care, with careful study of possible cases of disproportion will help decrease the frequency of rupture of the uterus. The use of analgesia to prevent fatigue will lessen the frequency of early intervention in labor, and thus will prevent many traumatic ruptures.

CONCLUSIONS

1. Fifty-one thousand, five hundred and seventy-one cases were reviewed, and the incidence of ruptured uterus was found to be one in every 1,516 cases.
2. The average parity was 4.67 and the average age was 33 years.
3. The total maternal mortality was 50 per cent. The mortality of the complete rupture group was markedly higher than in the incomplete group.
4. The fetal mortality was 91.17 per cent.
5. The three most common etiological factors of ruptured uterus were:
   a. Internal podalic version.
   b. Previous section.
   c. The use of pituitary extract.
6. The lower uterine segment was the most common site of rupture in uteri without previous sections. The scar was the site of rupture in all previously incised uteri.
7. While the diagnosis of ruptured uterus is usually quite easy the atypical cases are quite frequent.
8. The treatment of ruptured uterus has been outlined.
9. The elimination of the causative factor will greatly reduce the incidence of ruptured uterus.

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BILIARY DYSKINESIA *

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BILIARY DYSKINESIA is a condition characterized by recurring attacks of colicky epigastric pain occurring in patients who have had cholecystectomies for chronic infections with or without stones and in patients in whom nothing is found at operation or from laboratory studies to account for the pain.

The investigations of Ivy and others[1] have shown that functional disturbances may precede or even cause organic changes in structure of the bile ducts and gall-bladder. There are three kinds of functional disturbances of the biliary passages, namely, of absorption, of secretion and of motility. Of these, functional disorders of motility or biliary dyskinesia may produce biliary stasis and the symptoms of gall-bladder distress or colic in the absence of calculus or inflammation. The first clinical reports of gall-bladder colic without stone or infection were made by Krukenberg[2] in 1903 and Borghi[3] in 1913. In 1909 Aschoff and Boemeister[4] laid the foundation of our present knowledge by describing the "stasis gall-bladder." They described the atonic and hypertonic forms depending upon the condition of the muscle wall of the gall-bladder. In 1920 Schmieden[5] correlated the pathological and clinical findings. He thought the pain was caused by distention of the gall-bladder due to an anatomical defect in the cystic duct. In 1922 Berg[6] suggested that a functional disorder of the biliary passages might be the cause of the stasis. He observed hypertrophy of the muscle surrounding the ampulla of Vater. Oddi[7] and Meltzer[8] in 1917 thought that spasm of the sphincter of the ampulla might be the cause of biliary colic and icterus. In 1923 Westphal[9] classified biliary dyskinesia as follows:

1. Hyperkinetic:

a. Hypermotile; increased motility of the gall-bladder and ampulla with rapid emptying.

b. Hypertonic; contraction of the gall-bladder against spasm of the sphincter with spastic distention and colicky pain.

2. Atonic; relaxation or atony of the gall-bladder with spasm of the sphincter of the papilla causing atonic distention of the gall-bladder with mild, continuous, "heavy" aching sensation.

In man the liver is constantly secreting bile at a pressure of approximately 30 cm. bile pressure. The maximum expulsive power of the gall-bladder amounts to from 20 to 30 cm. of water. The usual resistance of the sphincter of Oddi in man amounts to from nine to 25 cm., but normally the sphincter may offer as much as 75 cm. resistance. This is important since all animals that have a sphincter have a gall-bladder apparently to prevent back pressure on the liver.[10] In disturbances of motility there is a spasm of the sphincter of Oddi and/or the midportion of the duodenum and the pressure may rise to 500 cm. bile pressure or more. This dilates the common duct and produces symptoms which may occur when the pressure reaches 50 cm. or more.

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Stasis of the gall-bladder and increased pressure in the common bile duct may be produced by (1) hypertonicity of the sphincter of Oddi; (2) inflammation of the ampulla; (3) obstruction or stricture of the common duct; (4) duodenal inflammation; (5) reversed peristalsis or hypertonicity of the duodenum; (6) inadequacy of fats, proteins or fruit juices in the diet; (7) narrowing or inflammation of the cystic duct; (8) obstruction of the cystic duct; (9) hypertonicity of the gall-bladder; (10) inflammation, fibrosis or obstruction of the gall-bladder; (11) pregnancy.[11 12 13 14]

SYMPTOMS

Pain, nausea and vomiting are common symptoms in gall-bladder colic. The nausea and vomiting occur reflexly through the vagus nerve and the pain through the splanchnic nerves.[15] Changes in heart rate and extrasystoles may occur in biliary colic and clear up when the gall-bladder is removed or successfully treated.[16]

Experimentally in man it has been shown[17] that (a) a carbohydrate meal has no significant effect on the sphincter of Oddi but a fatty meal decreases resistance; (b) all opium alkaloids, especially morphine cause spasm, and amyl nitrite, glyceryl trinitrate, theophylline and magnesium sulphate decrease resistance of the sphincter. Ivy working on dogs showed that distention of the colon reflexly causes the sphincter to become hypertonic, spastic or irritable and reduces flow of bile 50 per cent in 90 per cent of the cases. Section of the hepatic nerve prevented this inhibition of secretion.

The diagnosis of biliary dyskinesia can usually be made by the characteristic location of the pain in the right subcostal region extending around into the right scapular region. At times the pain may be localized in the region of the right kidney. Differentiation from colic due to stones or chronic infection may be difficult and is made by x-ray studies including the Graham-Cole test, and studies of duodenal drainage. The most characteristic symptom which functional biliary dyskinesia cases show is marked headache. Many of the patients have had their gall-bladders drained or removed without any relief from symptoms. A characteristic attack of colic can usually be induced in five to 30 minutes by the hypodermic injection of morphine sulphate, gr. one-sixth which causes a spasm of the sphincter of Oddi and the midportion of the duodenum. Larger doses of morphine will decrease the sensibility to pain by acting on the higher nerve centers, but at the same time it prolongs and even augments the increase in pressure in the common bile duct. A spontaneous or induced spasm is usually relieved by inhalation of amyl nitrite or by sublingual administration of 1/125 grain glyceryl trinitrate.

TREATMENT

Since these cases are usually associated with and influenced by chronic atonic or spastic constipation, we should try to redevelop the normal habits of the gastro-intestinal tract. A regular eating and attempted bowel movement regimé should be instituted. The diet should be bland, well balanced, contain no fried foods or cooked fats, contain plenty of cream and raw egg yolks, and be fortified with vitamin B complex, which is necessary for normal gastro-intestinal peristalsis. The caloric content of the diet should be adjusted according to the patient's weight. The asthenic underweight individual should have plenty of uncooked fats to build up his weight and stimulate his gall-bladder which is probably atonic. Obese patients should have a low calory diet to reduce their weight. Reducing these individuals often helps their gall-bladder function. Frequent feedings are of value. Barbiturates and atropine may be useful for mild sedation and symptomatic relief. They are best prescribed before meals. Trasentin may be more valuable than atropine because of its lack of side effects. Olive oil before meals or magnesium sulphate before breakfast may lessen the severity of the attacks. If there is a gastric

anaacidity, dilute hydrochloric acid thirty to sixty drops in a glass of water or fruit juice should be given with meals. Alkaline powders should be given if there is hyperacidity. Mineral oil, agar, and occasional doses of milk of magnesia may be necessary for the constipation if present. Bile salts may be of value in some cases by their stimulation of the liver and possible relaxation of the sphincter of the bile duct. The value of non-surgical duodenal drainage is questionable.

To prevent the colicky attacks the best drug is glyceryl trinitrate which is given in doses of 1 240 grain sublingually, every three hours for three days; then after meals and at bedtime for three weeks.[18]

This course of treatment produces permanent relief in most cases providing there is not a stone in the common bile duct. This treatment may also be useful as a temporary procedure in cases of cholelithiasis in which surgery is deemed inadvisable because of hypertension, coronary thrombosis, renal disease or advanced age.

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Tonsillectomy Technique

The extreme pain and discomfort following surgical removal of the tonsils may be reduced to a minimum by means of a flap of mucous membrane from the tonsil which is used to cover the wound made by the operation, Robert H. Fowler, M.D., New York, reports in *The Journal of the American Medical Association* for August 2.

"Today the surgeon in almost every instance can assure the patient that the tonsils will be successfully removed—the tonsil, the whole tonsil and nothing but the tonsil—without injury to the other structures of the throat," Dr. Fowler says, "yet four decades ago such assurance was the exception rather than the rule. Up to the turn of the century tonsillotomy was practiced, and the use of that operation continued throughout the first decade; in the second decade of this century too much was removed; automatic instruments came into vogue which stripped away from the throat a thin sheet of muscle; in the third and four decades standards of removal of the tonsils have been improved until a 'muscle free dissection' is the common aim of all.

"For fifty years we have seen the tonsillar fossa neglected after all traditional operations and the whole raw surface of the wound after enucleation left exposed to every accident of trouma from food in the throat and to its full quota of infection. There is something fundamentally wrong here."

LEAD INTOXICATION IN CHILDREN FROM THE BURNING OF BATTERY CASINGS: REPORT OF TWO CASES*

By CURTIS P. ARTZ, M.D.
Grantsville, West Virginia

IT has been known for many years that lead enters the body through three portals—the skin, the lungs, and the gastrointestinal tract. Until recently the latter channel seemed most frequent, especially in infants. However, the discovery of Williams[1] and others in Baltimore in 1933 cast a new light on the source of the offending poison in acute plumbism. They noted that children were inhaling toxic amounts of lead from the burning of old battery casings used as fuel. Several workers in other parts of the country have since corroborated these findings to such an extent that now some writers[2] list inhalation as the chief mode of entry, particularly in younger subjects.

Despite the publication of these results in authoritative medical journals, it has been noted that many established practitioners of medicine are not cognizant of this phenomenon in the etiology of lead poisoning. The recognition of this increasingly important hazard should extend to every physician engaged in pediatrics or general practice. It is with this view in mind that these two cases are presented.

CASE REPORT

Case 1: F. L. R., a two-year-old white female child, was admitted to the accident room of Camden-Clark Memorial Hospital at 2:00 a. m. on January 15, 1941, complaining of convulsions of 15 minutes duration. Her family stated that she had experienced abdominal cramps and vomiting for three days. They said that she had been very pale for 10 days preceding her abdominal symptoms. She was a full term baby, spontaneously delivered, and fed on breast milk. However, she had had no cod liver oil nor milk since one year of age, and a minimal amount of fruits and vegetables.

Physical examination revealed a well developed, well nourished, two year old white female with a temperature of 102.6, rapid pulse and respiration. There was a bilateral twitching of both extremities, the neck was hyperextended, and the eyes rolled upward and to the right. The throat was benign, the ear drums were not injected, and both lung fields were clear. The heart was rapid with no murmurs, and the abdomen spastic, but no definite rigidity was noted. The Kernig and Brudzinski signs were negative, but there was a positive Babinski bilaterally. The deep reflexes were hyperactive. The child was sent to the ward with a diagnosis of rachitic tetany. Morphine and chloral hydrate were used to control the convulsions, blood studies were ordered and an x-ray of the long bones was requested. The following morning her temperature had subsided to 100.2. A spinal puncture was done and a diagnosis of lead encephalopathy was made following laboratory reports. Red blood cells showed two and one-half per cent basophilic stippling, blood calcium was 8.0 mg. per cent, phosphorus 3.0 mg. per cent and x-ray revealed abnormal zones of increased density at the distal ends of the long bones. The spinal fluid showed 56 cells predominantly lymphocytes, a few red blood cells, markedly increased globulin, and a four plus Wassermann. The stool culture was negative.

After a definite diagnosis had been made, treatment included chloral hydrate rectally, magnesium sulphate intramuscularly (four cc. of 25 per cent every six hours), sodium acid phosphate (45 grains three times a day), and a high phosphorus diet. In spite of this therapy the child grew progressively

THE AUTHOR

Dr. Artz, graduated Ohio State University, 1939; interned Baltimore City Hospital; assistant resident, Camden-Clark Memorial Hospital, Parkersburg; now attending staff, Camden-Clark Memorial Hospital.

*Read before the Parkersburg Academy of Medicine, Parkersburg, West Virginia, February 19, 1941.

weaker, and expired in respiratory failure 16 hours later.

Necropsy revealed few unusual findings. There was a bilateral pyelitis, a few linear hemorrhages in both kidneys, and marked edema of the brain.

On questioning the family as to the source of lead, it was found that this child had lived in one room where discarded battery casings had been used as fuel for three weeks preceding admission.

Case 2: Further investigation in the vicinity of the home of Case 1 revealed many other homes using battery boxes. One white male child, W. R., one year old, had been exposed to these fumes for two winter seasons. He was pale, listless, and experienced occasional bouts of vomiting. This child came to the hospital as an outpatient, and was found to have hemoglobin 40 per cent, red blood cells 2,800,000, with basophilic stippling of the red cells exceeding two per cent. Roentgenograms of the long bones revealed an increased density at the metaphysis. There were no unusual findings on physical examination, and no history of convulsive disorders. He was put on a diet consisting of large amounts of milk, three eggs, and 200 mg. of cevitamic acid daily. One week following his hospital visit the child returned in convulsions. He was put to bed, given chloral hydrate by rectum, and magnesium sulphate, four cc. of a 25 per cent solution intramuscularly every three hours. The convulsions were well controlled and he was observed carefully for signs of respiratory distress. However, his recovery was uneventful, and three days later he was sent home on his original diet and daily dose of vitamin C. At his last visit three weeks later he was taking his diet well and had experienced no untoward symptoms.

LEAD INTOXICATION IS FREQUENT

Lead intoxication in children is found more frequently than is commonly suspected, and must be considered in the differential diagnosis of afflictions of the nervous system and gastrointestinal tract.

In addition to the method of entrance already presented, there are a variety of ways in which toxic amounts of lead may be acquired. Infrequently it may be absorbed through the skin, but more often it is ingested. A nursing infant may receive appreciable amounts following the use of a lead nipple shield or the application of lead acetate to the mother's breast. Commonly it is absorbed by the gastrointestinal system due to perverted appetities. Some children choose to gnaw the paint from their cribs, toys, or various articles of furniture. Drinking water from lead plumbing, or fruit sprayed with lead compounds are also offending agents. Lead poisoning has been reported to occur following the ingestion of mother's milk containing appreciable amounts of lead. One case was found in the literature resulting from the use of lead dishes. A great many cases in Japan were found to be due to a face powder containing lead.

CASES FOUND IN INDIGENT FAMILIES

When battery "boxes" afford the toxic substance, the cases are usually found among the younger members of indigent families. The salvaged casings are easily procured and make excellent fuel. Examination of used batteries reveals a brownish gray deposit on the discarded shell from which the lead plates have been removed. This precipitate consists chiefly of lead sulphate, with a smaller amount of lead peroxide which has been formed by the reaction of sulfuric acid and the lead in the plates.

The exact chemical nature of the lead compound formed on vaporization by heat has not been definitely determined. Nevertheless the smoke of burning battery casings gives a strongly positive test for lead. The soot taken from stove pipes where these "boxes" have been burned reacts likewise.

It would hardly seem feasible that the amount of lead present in room air, regardless of the large number of openings in the stove, would be of sufficient quantity to produce poisoning. However, exposure is rather intense, since the type of family using this fuel almost invariably lives in only one room. One must also bear in mind that inhaled lead passes directly into the blood stream.

The younger members of the family are more frequently affected. This may be due to the fact that they are exposed to the fumes for the entire 24 hours, whereas their elders

spend a part of the day outdoors. The increased tolerance of the more mature individuals also seems to be a factor. Cases have been reported in patients 34, 35, and 49 years of age, but for the most part intoxication of the above mentioned etiology is usually found in children from nine months to 14 years.

In the series presented by Williams[1], the least exposure was four months, but one of the cases in this report followed the use of battery casings for only three weeks.

The disease is usually insidious in onset. Increasing pallor, listlessness, and vague gastrointestinal complaints such as abdominal cramps, vomiting, and constipation, or occasionally diarrhea, predominate among the prodromal symptoms. Many cases are not seen, or fail to be recognized during this stage. Often physicians as well as parents are not awakened to this condition until after some dramatic neurological episode like convulsions or the onset of profound lethargy and coma. The central nervous system is particularly vulnerable in children. Headache and drowsiness may precede the convulsions, which are very severe and extremely difficult to control with ordinary sedatives.

Unlike chronic lead poisoning in adults, these cases usually fail to present the characteristic gum line or wrist drop, but fever is not an uncommon finding.

PHYSICAL EXAMINATION

Physical examination rarely reveals anything of significance. The skin and mucous membranes are usually pale, and the neurological manifestations of a typical meningitis may be present.

The diagnosis is usually made by the laboratory. The blood picture is that of a secondary anemia with hemoglobin readings ranging from 30 to 80 per cent. Basophilic stippling of the red cells is especially conspicuous. This may be as high as 5.4 per cent. Recently, reticulocytes in the blood exceeding one per cent has been considered significant.

The most constant change found is metallic deposits in the metaphysis of the long bones. Roentgenograms reveal a zone of increased density beneath the epiphyseal line. However, it must be remembered that other metals such as phosphorus, arsenic, and bismuth may show the same x-ray findings.

The cerebrospinal fluid is usually under increased pressure, clear, with increased proteins and normal or increased sugar content. The cell count varies up to 120 per cubic millimeter. Lymphocytes predominate. Some cases of lead encephalopathy will show no spinal fluid change.

Increased amounts of lead in the urine, blood, and cerebrospinal fluid are usually found. Urinary lead may exceed 0.10 milligrams per 1,000 cc. and the blood lead may be as high as 0.2 milligrams per 100 cc.

Necropsy usually reveals an increase in lead found in the liver, kidneys, and spleen. On opening the skull a typical picture of encephalitis is seen if encephalopathy was present clinically.

In some cases the diagnosis of lead poisoning is relatively easy, but others may present great difficulty. A history of plumbism in other members of the family, ingestion of paint, or the burning of battery casings offer a definite clue. Roentgenograms showing metallic deposits in the long bones, and punctate basophilia coupled with symptoms of encephalopathy are diagnostic. The laboratory may make the diagnosis by finding large amounts of lead in the blood and urine.

Differential diagnosis involves mainly neurologic disorders of infancy. Tuberculous meningitis, encephalitis secondary to an acute infection, uremic and diabetic coma, brain tumor, rachitic tetany, and acute transitory cerebral manifestations of gastrointestinal disorders are the most important confusing entities. Spinal puncture, x-rays, and laboratory examination of the blood and urine offer adequate aid in differentiation.

Kashara and Mii[3] have recently modified the sodium sulphite percutaneous test of Sano

and Wakao for detection of lead in the human organism. They report a more sensitive reaction with their method. A drop of 25 per cent sodium sulphite solution is placed upon the flexor surface of the forearm or nail which has previously been cleansed with alcohol. A cross incision about one centimeter long is then made in the outer layers of the skin. When lead is present in toxic quantities a black or brownish-black cross appears within a few seconds. This test is positive in 65 per cent of cases of lead poisoning.

TREATMENT

At best the therapy of lead intoxication is unsatisfactory. Usually the immediate problem is to control the convulsions, which are thought to be due to cerebral edema. Repeated injections of 25 per cent solution of magnesium sulphate intramuscularly are very beneficial. The dose of 0.4 to 0.8 cc. of the solution per kilogram of body weight, and may be administered every three or four hours. Chloral hydrate in large doses by rectum is an excellent therapeutic adjunct. Since death is usually caused by central respiratory failure, morphine is to be used sparingly due to its depressive action on the respiratory center. Levinson and Zeldes[2] have reported excellent results with the intravenous administration of 100 to 300 cc. of five per cent calcium lactate. These convulsions are extremely hard to control, and chloroform anesthesia may be necessary in stubborn cases.

The most important part of therapy is the removal of lead from the environment. After the acute attack has subsided there remains the problem of "de-leading" the patient. This is a disputed question. The use of potassium iodide and ammonium chloride to encourage rapid elimination of lead was once recommended. Such measures are frowned upon today because it is felt that an increase of lead in the blood may stimulate acute cerebral exacerbations. If the lead is left in place it remains a definite menace, for new infection may produce fresh symptoms.

There are many reports in the literature concerning the use of vitamin C. Holmes and associates[4] report a marked improvement in the blood and general condition of 34 individuals with clinical lead intoxication following the administration of 100 milligrams of ascorbic acid daily. Pillmer and his coworkers[5] fed two series of guinea pigs basic lead carbonate. One group received large doses of vitamin C. They concluded that the vitamin was not protective against weight loss, anemia, and punctate basophilia, but that it was effective in preventing the onset of neuroplumbism.

Goodwin[6] states that he believes some benefit was obtained in his cases from the use of large doses of cevitamic acid. He gives 200 to 500 milligrams a day for several days, then decreases the dosage to 200 milligrams.

Dannenberg, Widerman, and Friedman[7] report no beneficial effects from the daily administration of 100 milligrams of vitamin C orally, and 200 milligrams intravenously, for 12 days. However, the same case showed marked improvement after 10 days on a high calcium and phosphorus diet with 10 cc. of a 10 per cent solution of disodium phosphate four times a day.

Levinson and Zeldes[2] have advocated the use of 45 grains of acid sodium phosphate three times daily, accompanied by large doses of vitamin C.

Kowalaff[8] has considered lead intoxication from a physicochemical standpoint, and concludes that a high content of inorganic phosphorus in the serum appears to be the most rational method of decreasing the lead concentration of the blood. To produce this increase in serum phosphorus he advises a diet of 32 ounces whole milk, two eggs, and 30 cc. of a 10 per cent solution of disodium phosphate daily. His results in lead encephalopathy with this therapy are most encouraging.

The prognosis in cases with encephalopathy is very grave. About 40 per cent die, and the others may show mental retardation or

obscure personality disturbances of various degrees.

SUMMARY

Two cases of lead intoxication following the use of discarded battery cases as fuel have been reviewed.

The pertinent symptoms, physical findings, and laboratory data of the disease are discussed.

The literature has been reviewed to find the most efficacious mode of therapy. The works of various writers are cited. The use of a high phosphorus diet, disodium phosphate orally, and large doses of vitamin C seem to be the conclusive therapeutic choice. However, elimination of the source of lead is the most important measure of treatment.

A paper has been presented to refamiliarize busy practitioners with the fact that burned battery casings are an increasingly important source of lead in acute plumbism of childhood.

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AN AMBULATORY SPLINT FOR THE TREATMENT OF COMPOUND FRACTURES OF THE HUMERUS, ULNA AND RADIUS

By HOWARD A. SWART, M.D., F.A.C.S.
Charleston, West Virginia

TREATMENT of compound fractures of the arm bones, such as occasioned by injuries to the elbow projecting from a car window, has been rendered difficult by the multiplicity of the fractures and the fact that they are usually comminuted.

A few years ago, I was called upon to treat a man who had suffered compound fractures of the proximal ends of the ulna and radius and a simple fracture of the middle third of the humerus. The wound became infected and the ulnar fragments were so shattered that there was no way to reduce and hold the humeral fracture. Finally, after the head of the radius was excised, the wound healed and after a suitable waiting period, a bone graft operation was done for the fracture of the humerus.

It was to provide an effective means of reducing and maintaining reduction in compound fractures of the humerus, ulna and radius, that this splint was devised.

THE AUTHOR

Dr. Swart, graduated University of Toronto, 1926; interned Buffalo City Hospital; Fellowship Orthopedic Surgery, Mayo Clinic; in charge of orthopedic and traumatic surgery, Charleston General Hospital; American Academy Orthopedic Surgeons; Clinical Orthopedic Society.

After reduction of the fracture and debridement of the wound, a Kirschner wire is placed through the olecranon in compound fractures of the humerus. When the fracture involves the ulna or radius, wires are placed both through the olecranon and through the distal ends of the radius and ulna.

The arm is placed in the splint and traction is made by means of bows attached to the wires and also to semicircular arms with

holes for the reception of the screw holding the bow. Then traction may be made at any desired angle.

In fractures of the humerus counter traction is made against the chest wall by pulling distally on the wire through the olecranon. In fractures of the forearm bones, the proximal end of the ulna is fixed by the wire through the olecranon and traction is made on the distal ends of the radius and ulna by the wire running through them. Where the humerus and one or both bones of the forearm are broken, the bow attached to the olecranon wire is fixed at an angle of 45 degrees with the long axes of the bones.

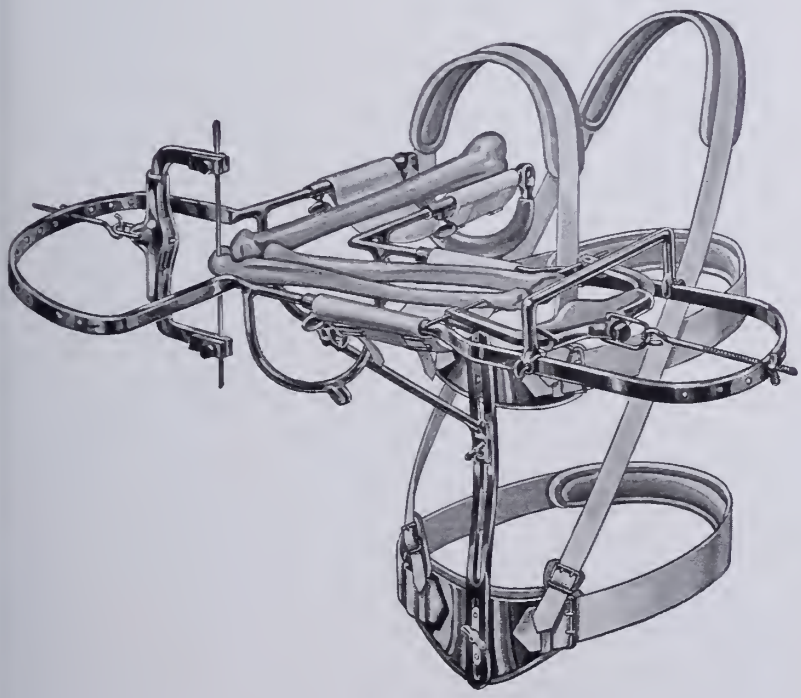
Dressings can be carried out with great ease, as it is not necessary to disturb the relationship of the bone ends in so doing. The fracture fragments do not move at any time, thus rendering dressings painless. The arm and forearm are supported by removable canvas slings. The patient may be ambulatory after a few days thus reducing the hospital expense.

The splint can be used for either arm by making a very slight change. In fractures of the humerus only, the forearm is supported on a cock-up splint which is removed when it is desired to treat the ulna and radius.

Both upper arm and forearm parts may be lengthened or shortened according to the length of the arm. The angle at which the arm is abducted may also be adjusted to any position desired. As may be seen, the splint is based on the body part of an ordinary aeroplane splint with the usual straps. There are two straps around the body, a short strap over the shoulder of the arm involved and a long diagonal strap running from the base of the body part of the splint over the opposite shoulder.

The splint may also be used in the treatment of simple fractures of any of the arm bones. As shown in the illustration the wires are set for the treatment of fractures of the forearm.

When the wound has healed the splint may be left on until consolidation of the fractures occurs or a plaster cast may be applied incorporating the wires with the splint in situ. When the plaster has dried the splint is removed and the wire ends fixed by tauteners and then plastered over.



This illustration of the ambulatory splint shows the two straps around the body, a short strap over the shoulder and a long diagonal strap from the base of the body part of the splint over the opposite shoulder. The wires are shown set for treatment of fractures of the forearm.

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

Ten years ago no more than a dozen school health administrators were seeking out tuberculosis among the students in colleges and universities, despite the acknowledged predilection of the tubercle bacillus for those of this age group. Today 248 institutions of higher learning have some form of program for the finding of tuberculosis on the campus. The tenth annual report of the Tuberculosis Committee of the American Student Health Association is both a record of progress and a reminder of what is still to be done.

Finding Tuberculosis Among College Students

The colleges and universities of the United States and Canada are becoming increasingly "unfair to tuberculosis!" They are showing that they recognize an obligation to safeguard and improve campus health and the present report of the Tuberculosis Committee relates action such as no previous report has recorded.

For the academic year of 1939-1940, 248 colleges had some form of tuberculosis control, an increase of about 50 per cent over the preceding school year. Necessarily, where a movement is gaining new adherents annually, the character of individual programs varies greatly. There are still 629 colleges with no program but about 30 of these hope to initiate one this year. Although 402 schools neglected to return the questionnaire sent by the committee, there were 193 additional replies this year. In spite of this, six states have failed to report a single collegiate tuberculosis program.

The duties of the committee fall into three divisions: first, the presentation to interested schools of the most approved outline of workable institutional tuberculosis case finding; second, the active encouragement of interest in case finding; and third, the collection, analysis and publication of statistical data secured from colleges taking part in the national survey.

Since the statistical data collected by the committee are submitted by many people and accumulated under widely differing conditions, some are open to criticism so the report figures are indicative of trends rather than mathematical pronouncements.

The procedure is to mail questionnaires early in May to cooperating schools and a follow-up is sent in October when necessary. Nothing is asked which would require the keeping of complex records. The form requests the name and enrollment of the college, number of positive reactors to tuberculin, tuberculosis cases discovered and their disposition, and the number of students tuberculin tested and x-rayed elsewhere than on the campus. Similar data are requested on non-student tuberculosis. Returns are divided by sex. The reverse side contains questions as to procedure which, in general, can be answered by a check mark. The recommended techniques are plainly underlined. A duplicate copy of the questionnaire is sent for the use of the health officer of the institution.

This year questionnaires were sent to 20 colleges and universities in Canada. There is no Canadian student health association and so frequent have been the requests for information that it was decided to circularize these colleges. Several fine programs are already under way in Canada.

More colleges have discovered this year that a relatively simple system suffices to keep track of tuberculin testing, negative and positive reactors, x-ray results, etc. It is essential that those conducting health work know, at any time, the exact status of their effort and the result.

The committee agreed that tuberculin testing is a prime prerequisite to a tuberculosis case finding plan and believes that only thus can all infected students be identified. The committee recommends the annual retesting of all negative reactors since the initial infection occurring in a young adult may produce an unpredictable clinical sequence of events. Where hazards of infection are heightened, as in nursing, medicine, dentistry, practice teaching, etc., more frequent testing is indicated.

The committee recommends that only reliable tuberculin be used and that a positive reaction to the tuberculin test be succeeded by a good chest film. Where possible, the fluoroscope should be used as a supplement to the film.

In Table I data from 166 colleges are compiled because their figures seemed satisfactory in quality. The continued shrinkage in positive reactors seems to indicate a national decline in childhood infection.

Using only the active cases for comparison, it is seen that such cases were turned up with much greater frequency in Group A. It is fair to presume that these cases were found early, often preclinically, instead of late and with marked signs and symptoms, which proves again the importance of early diagnosis.

TABLE I

Tuberculin Testing of American College Students

Year	Total No. Tested	Per cent Positive
1932-33	14,318	35.0
1933-34	25,184	30.3
1934-35	26,861	29.4
1935-36	31,601	30.0
1936-37	56,224	27.3
1937-38	64,232	25.8
1938-39	82,774	25.5
1939-40*	123,389	25.4

*Reliable returns only.

The results of the survey in cases found are condensed into Table II.

TABLE II

Cases of Pulmonary Tuberculosis

Diagnosed Among College Students 1939-40

A. In institutions with some tuberculosis control program.

B. In institutions with no tuberculosis control program.

	A.	B.
Clinically active cases diagnosed*	292	21
Apparently arrested cases diagnosed	345	14
Withdrawals due to tuberculosis	273	25
Old cases back in school	338	23
Institutions reporting	248	227
Approximate total enrolment	490,000	200,000

*Generally recognized criteria of activity were specified.

Educators are sensing the urgency that animates an enlightened citizenry intent on eliminating every preventable disease. The ultimate aim of the committee is to report that in answer to their questionnaire, every American college has replied: "We have a modern tuberculosis control program, and tuberculosis will not catch this college or any of our students napping."

Tenth Annual Report of the Tuberculosis Committee, American Student Health Association, 1939-40 by Charles E. Lyght, M.D., Chairman, Journal-Lancet, April, 1941.

Tuberculosis Deaths

A definite increase in the number of old people dying from tuberculosis has occurred during the past few years. In the year 1940 almost one-fourth of the tuberculosis deaths in the City of Peoria, Ill., were persons of 60 years or over. As is true the country over, in the age group of 15 to 34 more women died than men. The hazards of puberty in the girls and the strain and stress of childbearing are chiefly responsible for this fact.

TWENTY-FIVE YEARS AGO

From the W. Va. Journal of September, 1916

Officers of the State Association elected at the 1916 annual convention were:

President, A. P. Butt, Davis; first vice president, G. C. Schoolfield, Charleston; second vice president, A. S. Bosworth, Elkins; third vice president, S. P. Lawson, Logan; secretary, J. Howard Anderson, Marytown; treasurer, H. G. Nicholson, Charleston; delegate to A.M.A., Frank L. Hupp, Wheeling; chairman of the Council, J. E. Rader, Huntington.

* * * *

Drs. Atlee Mairs, G. H. Barksdale and M. I. Mendeloff, all of Charleston, are in Boston, taking the summer course in postgraduate medicine which is given by Dr. Cabot.

Dr. E. H. Updike, who was at Elk Garden for a short time, is now located at Mill Creek, taking the place of Dr. Kennedy, who was killed there last spring.

Dr. R. H. Powell of Elkins, has somewhat retired from his strenuous professional labors and is trying to learn to manipulate his new "Overland."

* * * *

The Raleigh County Medical Society met at Stotesbury, with Drs. Fisher, Thornhill and Johnson, on June 18, 1916. The following officers and physicians were present: Drs. J. E. Coleman, K. M. Jarrell, F. S. McChesney, W. W. Hume, E. B. Dovell, Ira Fisher, G. W. Johnson and G. T. Thornhill. After a sumptuous dinner, which was enjoyed by all, we proceeded to the town hall where the meeting was held.

Dr. J. E. Coleman, surgeon-in-chief of the Beckley Hospital, gave a paper on "Local Anesthesia." He dealt with great emphasis on prevention of shock after an injury by blocking the nerves with cocaine and novocaine before starting the patient to a hospital and before operating in case of severe injury.

* * * *

The Lewis County Medical Society met July 11, 1916 on the lawn of the Weston State Hospital at 2:00 p. m., with Dr. J. I. Warder, president, in charge. Those present were: Drs. Cure, Snyder, Cooper, King, Reger, Hamilton, Heath, McDonald, Woofter, Green, Gray, Denham, C. R. Weirich of Wellsburg, and C. W. Halterman, superintendent of the Weston State Hospital.

President's Page

There is increasing evidence that prevailing policies of the state and county departments of public assistance are having a tendency to confuse, rather than clarify, the subject of eligibility for public aid medical care, with the result that the medical profession has a less clear vision of its status now than during the past two or three years. This does not necessarily condemn the prevailing policies or those responsible for their making and administration. It is rather an admonition that the medical profession do everything reasonable and proper to help bring about a more stable picture.

Difficulties now being encountered in applying the principles of the West Virginia medical relief program do not involve any new medical problems but, have their origin in changes affecting the social aspects of the public assistance program. Redefinition of a relief household seems to have shifted more persons from the Federal-State classified aid fund to the State-County general relief fund, which fund is the least able of the two to bear any appreciable increase in service costs. Budgets for the determination of whether or not a family or individual is in need of public aid have been liberalized, which will increase the number of persons socially eligible for public aid, either in cash, commodities, or services. All of this adds up to the conclusion that the public assistance agencies, by reason of budgetary limitations on a certain class of their funds, are not able to practice the liberality which their formulas imply in theory—at least not until satisfactory fund transfers or adjustments can be made, if such is possible under complicated legal restrictions. If this is true, and public assistance formulas are more theoretical than practical at present, the medical profession will be more in the dark than ever as to knowledge of which patients are public responsibilities and which are private responsibilities. At this particular time when costs of medical supplies, rents, and general costs of living are increasing for the doctors and the hospitals, too, it is unfortunate that a clearer picture of public and private responsibilities cannot be painted so that doctors and hospitals might make their adjustments accordingly.

It is my opinion that the medical profession can be of material assistance in helping to bring about a closer approach to stabilization if each doctor seeing a public aid patient, or a potential public aid patient, will keep the costs of his services and all incidents thereto at a minimum compatible with good medical care. Recommendations for the more expensive types of drugs and medications should be avoided wherever possible, as should be recommendations for experimental therapeutics for and care of definitely chronic patients.

By way of concluding my observations on this subject, it would seem that liberalization of formulas for determining need of public assistance may well be followed by campaigns for more liberal budgets. Step by step, therefore, the approach would be closer to State socialization of medical care for the low income groups, as well as for the indigent. The time was never more propitious than the present for progressive study of voluntary medical care plans and steps on the part of the medical profession in West Virginia to approach that subject in a positive way. Continuous postponement and delay may be accompanied by new disruptions of the traditional doctor-patient relationships, if current trends are indicative.

Robt. S. C. Burford

President.

West Virginia Medical Journal

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CHARLESTON, WEST VIRGINIA

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THE NEW DISEASE

American physicians must prepare to cope with a new disease. It is becoming generally prevalent and may reach epidemic proportions and severity. It is contagious, and attacks without discrimination, including those who fill the ranks of the trades and the professions.

By virtue of their training, their ethics, the nature and the demands of their profession, doctors are especially susceptible to the contagion. Until it is better named, the new disease can be called "war fever." The future effectiveness of American medicine and the future status of the American doctor will be determined by the extent to which individual physicians are successful in immunizing themselves against the hysteria which is a symptom of and which always accompanies the disease.

The world is at war. One hundred and thirty million Americans are very much a part of this world. It is a wholly new kind of war. In times past, material advantage and territorial gains provided the incentive for wars of aggression. This is a war of ideological conquest. Material advantages and territorial gains are merely incidental to the larger purpose. It is an all-out warfare, spending lives and treasure on a scale never before contemplated or even imagined by man.

The present situation is beclouded with too many uncertainties to enable either the wisest or the best informed reasonably to predict the extent to which it may be necessary to sacrifice American lives and the material resources of the United States in order to win this war. It is a known fact, and should be faced accordingly, that we are in the process of mobilizing all of our energies and utilizing all of our resources for the accomplishment of this purpose.

It is almost needless to say that no group will be called upon to make a greater contribution than will be expected from the medical profession. It is needless to say that this contribution will be cheerfully, yea, even gladly made by American physicians. American doctors do not expect any special credit for the important service they are rendering or will be called upon to render. Their tradition, their training, their experience, and even their psyche, make this attitude inevitable. Many are already enlisted for the duration. The rest will be ready when called.

However, the greatest national danger lies in the possibility of these doctors becoming victims of the "new disease." On them rests a new and a most vital responsibility. It is of the utmost importance that these physicians ever keep in mind that the war itself is one of ideologies; that our first obligation and most difficult task is to preserve the priceless heritage of the American people which has set Americans over, above and apart from all the other people in the world. It is desirable to consider the "four freedoms" to all the other people in the world. But it is indeed more essential that we maintain our own independence and freedom of action, "for what shall it profit a man if he shall gain the whole world and lose his own soul?" It is our task now to "hold fast that which is good."

Tomorrow will come the peace. While we unselfishly and unlimitedly serve, we should make sure that the stifling control of bureaucracy is not permanently established. We should take steps to insure the preservation of the sacred doctor-and-patient relationship, the independence of the physician, the continued progress of American medicine and the safeguarding of the public interest.

Medicine's planning and administrative agency in these fields is the National Physicians' Committee for the Extension of Medical Service, Pittsfield Building, Chicago, Ill. It has demonstrated both its reliability and its effectiveness. In these times of increasing stress it should have the allegiance and financial support of all patriotic practicing physicians. Every doctor of medicine should appoint himself a committee of one to cooperate with N. P. C., to send that organization a contribution for the furtherance of its good work, and to urge upon each of his fellow physicians the biblical injunction, "go thou and do likewise."

ANOXEMIA AND THE SPECIAL SENSES

Owing to the ever increasing use of airplanes in commerce and war, anoxemia has become of general interest not only to the practicing physician, but to the layman. Most physicians are familiar with the symptoms produced by acute anoxemia. In point of fact, Sir Joseph Barcroft, of England, has likened them to symptoms of alcoholic intoxication; namely, headache, mental confusion, drowsiness and muscular weakness and incoordination. The effects of acute anoxemia on the special senses, however, are not so generally known.

It has been found that the judgment of distance, the size of the visual fields, accommodation and retinal sensitivity are unaffected at altitudes under 10,000 feet, but may show some impairment at 15,000 feet, which impairment becomes well marked at 20,000 feet. This is higher, however, than most pilots fly without using oxygen. It is of interest that if a pilot has ascended to extremely high altitudes, without the use of oxygen, the impairment or loss of accommodation and visual acuity may persist for some time. The pilot may get into difficulty in landing and it is not unlikely that some pilots have met disaster because of this.

The organ of hearing is very resistant to anoxemia. When individuals are subjected to progressive anoxemia, the sense of hearing is the last to disappear. The ear probably functions reasonably well until psychomotor collapse occurs.

It is thought that the senses of taste and smell are not affected until altitudes of 19,000 feet or more are reached. Nothing authoritatively can be said, however, about either of these senses, because they are so intimately associated that it is difficult to evaluate critically the results of experimental work done on either of them.

There is some evidence that tactual sensitivity is unchanged until an altitude of about 20,000 feet is reached. This sense is not greatly impaired even at extreme altitudes, so that it is more than moderately resistant to anoxemia.

It may be said, then, for practical purposes, that the organs of special sense are, perhaps with the exception of the eye, relatively resistant to anoxemia. The effect of anoxemia on the psychological processes, however, is a different matter; slight mental confusion, with its concomitant loss of judgment is indeed a grave matter. It is to guard against the effect of anoxemia on these psychological processes, rather than its effects on the organs of special sense, that pilots are required to use oxygen above a certain critical altitude.

HAIL, PHARMACISTS!

The state pharmaceutical associations of West Virginia, Kentucky, Ohio, Indiana and Michigan are sponsoring a series of educational broadcasts over WLW relative to pharmacy and the allied healing arts. From September 15 to 28, inclusive, this broadcast will feature pharmacy and medicine and will urge upon the laity the value of the health examination as well as the necessity for it. We believe these broadcasts will be of value not only to both pharmacy and medicine but will be conducive to the health betterment of the general public as well. We extend con-

gratulations to our co-workers, the pharmacists, and wish them much success in their undertaking.

THE CLAIMS OF THE SERVICE

The Congress of the United States has seen fit to establish the Selective Service Law as one effective means of bolstering our national defense. As a result of very active efforts of the American Medical Association ably supported by the surgeon generals of the Army and Navy, the director of the Selective Service Act has undertaken to defer bona fide premedical and medical students from active service as long as they are actively engaged in such training. As a result of this far-sighted planning, no student who is actually engaged in the study of medicine should expect to have his studies interrupted in any fashion and, by the same token, a supply of properly trained physicians sufficient for both civilian needs and for the armed services will be maintained. The Army and Navy have agreed to commission students who have satisfactorily completed their second year of medicine as second lieutenants and ensigns respectively. Subsequent to graduation these men, so commissioned, are automatically promoted to the next higher rank. However, a graduate doctor is, if possible, to be allowed to complete one year's general interneship either in a civilian or service hospital before being ordered to active duty.

This informed type of long range planning and cooperation on the part of all concerned is an excellent example of civilian and governmental cooperation within a democracy.

Obviously graduates of the next few years will have had bestowed upon them the opportunity of carrying to completion the basic training for their life work. Such an inestimable advantage does not exist for young men in any other country in this harassed world today. The deferment which has been granted to medical students in spite of the stress of these troublous times imposes a definite obligaton upon every physically fit graduate. It would seem right and proper that this obligation to the profession and to the country could only be discharged by the complete willingness of every young doctor to serve if needed in the medical departments of the Army, Navy, and Public Health Service.

Such willingness should be the natural and voluntary action of a free man, undeterred by personal sacrifice who desires to make his individual contribution to the welfare and safety of his native land, a land which has guaranteed to him the inalienable right to pursue his chosen profession according to his own light and the dictates of his own conscience.

It is our hope and our belief that the younger members of the profession will as always recognize and respond to the call of duty.

OUR HUMANITARIAN GOVERNOR

It is with much pleasure that we read in the daily press of Governor Neely's efforts to relieve the sad situation existent in West Virginia relative to mental disease and tuberculosis. That the institutions for the care of these two scourges of humanity should have long waiting lists, ill becomes a great state rich in material wealth and richer still in undeveloped natural resources. And that a large segment of our mentally ill population has to languish in jail like common criminals should make us bow our heads in shame. Another blot on the record of our management of those unfortunates who are patients in our mental hospitals is that we spend only approximately fifty cents per patient per day for their care and cure, only eight cents more than we allow for the mere food furnished our jailbirds. Certainly this pittance can not afford adequate treatment for patients suffering from the most baffling ailments to which flesh is heir. Twice the

present per capita daily cost should be the minimum expended if we expect to do a satisfactory job of the cure and rehabilitation of our psychotics.

The per capita daily expenditure for the inmates of our tuberculosis sanatoria is much more nearly what it should be; in fact, it is adequate. The essential problems in the tuberculosis situation are: (1) more beds; (2) better facilities for chest surgery, thus affording a speeding up in the improvement of what might be called the stagnant open case; and (3) a realization on the part of both the profession and the laity that if tuberculosis is ever completely eradicated, it must be by the segregation and treatment of all open cases until they are sputum negative, and that to be effectual this must be accomplished largely at the expense of the state.

We are not critical of our institutions or of their executives. On the contrary we congratulate them upon doing a splendid job when the facilities available are considered. But until the pursestrings are loosened and the legislature appropriates adequate funds, our care of the psychotic and the tuberculous must remain on a makeshift basis.

Our hats off to our humanitarian governor. We congratulate him upon the vim with which he is attacking these problems and wish him Godspeed and success in his efforts.

IN MEMORIAM

Those of us who learned our therapeusis and prescription writing before the era of the omniescient detail man will peruse with mixed feelings the list of deletions proposed by the Revision Committee of the twelfth United States Pharmacopeia which appears on page 426 of this JOURNAL.

Tried and found wanting and hereafter no longer on the recommended list, among others, are tincture of aconite, asafoetida, tincture capsicum, extract of nux vomica, iodoform, Dover's powder, spirits of nitre, Brown's mixture, pepsin and veratrum viride.

The course of science is ever onward and upward and in that journey the conscientious and progressive physician will find occasion to discard many a well considered and familiar remedy. He will, with due consideration, lay aside the old and try the new, knowing that after ten years some of the new in turn will be found among the deletions.

Just as a man rejoicing in a new suit of clothes puts aside the old with regret, so among us are those who will scan the list of deletions with some sense of melancholy.

Obituaries

Doctor Irving Delbert Cole

Dr. Irving D. Cole of Clarksburg, died on August 10 after an illness of a year. Dr. Cole was born on July 21, 1881 on Kincheloe Creek near what is now the town of Mineral. He attended the Two Lick rural school with Lloyd Wright as his first teacher. He later attended Broaddus Institute in Clarksburg and taught school for three years. He received his medical education at West Virginia University and the College of Physicians and Surgeons in Baltimore, from which he graduated in 1908.

Dr. Cole went to Clarksburg in 1915 to specialize in eye, ear, nose and throat and practiced there until his last illness. He was a Fellow of the American College of Surgeons, and did postgraduate work in the finest medical centers both here and abroad.

Dr. Cole is survived by his wife, daughter, and two grandchildren.

In State Association activities, Dr. Cole was always a prominent figure. He was president, secretary, and delegate of the Harrison County Society and councillor of the State Association, as well as a member of many important Association committees.

The family physician occupies the key position in finding tuberculosis. He, in the final analysis, plays the most important part in the reduction of tuberculosis because the control of the disease begins in his office.—L. M. Morse, M. D., Wisconsin Medical Journal, March, 1941.

General News

Sixth District Meeting

The sixth councillor district of the West Virginia State Medical Association will hold a joint meeting with the West Virginia Tuberculosis and Health Association on September 17 and 18 at Beckley. Pinecrest Sanatorium will be host to the meeting.

In the morning of September 17 at 9:30 o'clock the Tuberculosis Nurses' Institute will meet. At 12:15 p. m. there will be the annual luncheon meeting and business session of the West Virginia Tuberculosis and Health Association and its affiliated county societies and committees.

At 2:15 p. m., at the Black Knight Country Club, the sixth district meeting will take place with Councillors H. L. Goodman and Andrew E. Amick presiding.

The program of speakers and their papers is as follows:

Dr. David I. Salkin, Hopemont Sanitarium, "A Pneumothorax Program for West Virginia"; discussion by Dr. A. Robert Stork, Charleston.

Dr. George F. Evans, Clarksburg, "The Purpose and Program of the West Virginia Tuberculosis Association."

Dr. G. G. Irwin, Charleston, "Tuberculosis of the Genitourinary Tract"; discussion by Dr. C. J. Reynolds, Bluefield.

Dr. William L. Cooke, Charleston, "The Rôle of the Home Doctor in the Control and Treatment of Tuberculosis"; discussion by Dr. Harold Jones, Montgomery.

Dr. H. E. Kleinschmidt, New York, "Tuberculosis in General Practice"; discussion by Dr. Walter E. Vest, Huntington.

Dr. H. E. Kleinschmidt, is director of Health Education of the National Tuberculosis Association, New York City, and has been affiliated with that association since 1927. He was for years a practicing physician and has spent several years with the American Social Hygiene Association.

Dr. Robert King Buford, Charleston, president of the West Virginia State Medical Association, and Dr. R. O. Rogers, Bluefield, president-elect, will attend the meeting and doubtless will have some constructive suggestions.

There will be an open house reception at Pinecrest Sanitarium later in the afternoon, and at 7:00 p. m., there will be an annual dinner meeting at the same place. Dr. K. M. Jarrell, Pinecrest Sanitarium, will preside, and Dr. Leo H. Mynes of Charleston will give his president's address, followed by the "George C. Rowell Memorial Address" by Dr. J. A. Myers, Professor of Preventive Medicine, University of Minnesota.

On Thursday, September 18, at 9:30 a. m., there will be a general medical and administrative session. Dr. E. Newton DuPuy, president of the Raleigh County Society will preside. Among West Virginia doctors on the program are, Drs. George C. Gwinn, Pinecrest Sanitarium; V. L. Peterson, Charleston, and C. F. McClintic, state health commissioner. At 12:15 p. m. the board of directors of the West Virginia Tuberculosis Association will meet at a luncheon.

A New Editor

Diseases of the Chest, the official organ of the American College of Chest Physicians, announces the appointment of Dr. Ralph C. Matson, of Portland, Oregon, as editor, succeeding Dr. Frank Walton Burge, of Philadelphia, who is retained on the editorial board. Dr. Matson previously served on the editorial staff of *The Western Journal of Surgery, Obstetrics and Gynecology*, and on the editorial board of *The Journal of the International College of Surgeons*. He is the outstanding chest surgeon of the northwest and presents the rare combination of an excellent chest surgeon and an outstanding chest clinician. He is a member of the faculty of the University of Oregon Medical School, teaching both thoracic surgery and clinical medicine as applied to the chest.

Dr. Matson announces as one of his objectives to make *Diseases of the Chest* a better publication for the general practitioner—certainly a worthy and practical aim.

The Mother's Charter

A "Mother's Charter" designed to summarize the minimum demands made on society by the mothers of its children, has been drafted by the American Committee on Maternal Welfare, central organization of the country's obstetricians, gynecologists, nurses, hospital and public health leaders in the fight to reduce maternal and infant mortality. The charter is essentially from the pen of Dr. Fred L. Adair of Chicago, chairman of the committee.

In the intense concentration of the nation's resources on the needs of defense, the committee

fears there is danger that the long fight to preserve the lives of American mothers and babies may lose its momentum. In the last few years the maternal and infant death rates in the United States have been brought down to record low levels and it is essential to hold these gains.

The "Charter" follows:

Every potential mother envisions the pleasures and obligations of creating and sustaining new life and is entitled to health and protection for the benefit of herself and humanity and she should have:

1. The inherent right to be well born without inherited or transmitted defect or disease.
2. The inalienable right to protection from disease and harmful influences.
3. The opportunity to learn and know herself during adolescence and maturity and to acquire a knowledge of the origin and significance of human life.
4. The right to protection from pitfalls of married life and to a knowledge of its significance to herself and her potential family.
5. The privilege of proper premarital and preconceptional medical examination and advice and care for herself and her mate.
6. The right of proper and adequate care during pregnancy.
7. The right to receive adequate and necessary care during labor in the home or hospital.
8. The right to have appropriate care following labor in the home or hospital.
9. The right to secure proper and continuing subsequent care for herself and baby.
10. The right of preservation of health and life and happiness for herself and family.

American College of Surgeons

The thirty-first annual Clinical Congress of the American College of Surgeons will be held in Boston, November 3 to 7, with headquarters at the Statler and Copley-Plaza hotels. The twenty-fourth annual Hospital Standardization Conference sponsored by the college will be held concurrently. About five thousand surgeons and hospital executives from all parts of the western hemisphere are expected to gather in Boston for these meetings, the program for which will include clinics and demonstrations in local hospitals and medical schools, as well as scientific sessions, conferences, medical motion picture showings and exhibits in the headquarters hotels.

The chairman of the Board of Regents of the American College of Surgeons is Dr. Irvin Abell of Louisville and the president is Dr. Evarts A. Graham of St. Louis. The president-elect is Dr. W. Edward Gallie of Toronto, who will be inaugurated at the presidential meeting and convocation to be held the evening of November 3 in Symphony Hall, when several hundred initiates will be received into the fellowship of the college.

Headquarters of the American College of Surgeons, which has a fellowship of more than 13,000 surgeons, are at 40 East Erie Street in Chicago, Illinois.

The Virginia State Meeting

The Medical Society of Virginia will hold its annual meeting at Virginia Beach, October 6, 7 and 8. Business sessions of the Council and House of Delegates will be held on Monday, October 6. October 7 and 8 will be given over to scientific subjects entirely. The headquarters will be at the Cavalier Hotel.

We remember with much pleasure our joint meeting with the Medical Society of Virginia last year, and look forward to the time when we may be able to have a joint meeting again in the not too distant future.

American Therapeutic Society

Dr. Oscar B. Hunter, secretary of the American Therapeutic Society, has announced that after polling the membership of that organization, Atlantic City has been chosen as the 1942 meeting place. The date of the meeting will be June 5 and 6, 1942, that is, Friday and Saturday preceding the meeting of the A.M.A. The hotel headquarters has not been announced yet, nor has the outline of the program been completed.

American Neisserian Medical Society

The American Neisserian Medical Society announces an annual prize of one hundred dollars, to be known as the P. S. Pelouze Award, to be presented to the person under thirty-five years of age who, in the opinion of the committee of awards, has made the outstanding contribution to the control of the gonococcal infections during the preceding year.

Nominations for the award should be sent to Oscar F. Cox, M.D., Secretary, American Neisserian Medical Society, 475 Commonwealth

Avenue, Boston, Mass., not later than March 31 of each year. The winner will be announced at the subsequent annual meeting of the society.

Medical Directory

About September 1, an information card will be sent from the headquarters office of the American Medical Association to every physician in the United States and Canada. The information secured is to be used in compiling the seventeenth edition of the American Medical Directory.

The directory is prepared at regular intervals in the biographical department of the American Medical Association. The last previous edition appeared in 1940. In it, as in no other published directory, are dependable data concerning physicians, hospitals, medical organizations and activities. The directory provides full information concerning medical colleges, specialization in the field of medical practice, memberships in special medical societies, tabulations of medical journals and medical libraries and, indeed, practically every important fact concerning the medical profession in which any one might possibly be interested.

Before filling out the information card, read the instructions carefully. Physicians are especially urged to state whether or not they are on extended active duty for the medical reserve corps in the United States Army and Navy. Fill out the card and return it promptly whether or not a change has occurred in any points on which information is requested. If a change of address occurs before March 1, 1942, report it at once. Should you fail to receive a card before the first of October, write at once to the headquarters office sttaing that fact and a duplicate card will be mailed.

Southern Surgical Congress

Dr. R. H. Walker, chairman, announces that the West Virginia Section of the Southeastern Surgical Congress will held its annual meeting in Charleston on September 23, 1941. The Daniel Boone Hotel will be headquarters and surgical clinics will be conducted at the Charleston General and Mountain State hospitals from 8:00 a. m., until noon.

Luncheon, open forum, and dry clinics will be held at the Daniel Boone in the afternoon. The profession is cordially invited to attend.

Southern Pediatric Seminar

The following West Virginia physicians were awarded scholarships and attended the Southern Pediatric Seminar at Saluda, North Carolina, July 21 to August 2, 1941:

Dr. H. H. Hancock, Union; Dr. E. A. Courrier, Keyser; Dr. L. E. Baron, Mannington; Dr. W. T. Smith, Glenville, and Dr. E. O. Vaughan, St. Albans.

The scholarships were awarded by the Division of Maternal and Child Hygiene of the West Virginia State Health Department. The course consitsed of an intensive course in pediatrics given by outstanding pediatricians in the south. Dr. D. L. Smith of Saluda is responsible for the fine course that is given. At Saluda is located a children's hospital which supplies clinical material.

The Maternal and Child Welfare Advisory Committee of the West Virginia State Medical Association cooperated with the Division of Maternal and Child Hygiene in arranging for these scholarships. Twenty scholarships were offered but only five general practitioners were found interested in taking the work. The scholarships were limited to general practitioners who assisted in the various maternal and child health conferences in West Virginia.

Dr. Nale Resigns

Dr. Thomas W. Nale, director of the Division of Maternal and Child Hygiene of the West Virginia State Health Department, has resigned effective September 1, 1941, to accept a position with the Carbide and Carbon Chemicals Corporation at its South Charleston plant.

Museum Bombed

From a letter from London, dated June 11, 1941, we learn of the destruction at the Royal College of Surgeons. A German bomb destroyed the larger part of the greatest medical museum in the world. The lecture room where discourses have been heard for a century from almost all the leaders of British surgery, is now a charred ruin. The main block of the library remains with books still on the shelves, but its condition is too dangerous for use.

Nearly ninety thousand volumes had been sent to various parts of the country after damage by blasts from a previous raid. The transfer was aided by a grant from the Rockefeller Foundation. The

principal treasures of the library had been sent away before the outbreak of the war. But the museum which possessed treasures such as no other country could boast, has suffered irreparable loss, although many of the most valuable specimens were saved by being put in a tunnel below the basement, surrounded by sand. The basement covers a wide area and most of it escaped the fire that occurred. The important college records dealing with the specimens saved in the basement and tunnel, and the records of pathologic specimens presented to the college during the last few years were destroyed.

Of the famous Hunterian collection, which forms the basis of the museum, no fewer than 3,750 specimens have been saved. Of the collections illustrating human anatomy only 20 specimens have been saved. Of 5,200 mammalian specimens illustrating comparative osteology only 20 or 30 remain and hardly any of the large amount of amphibian, reptile and aquatic material. Much anthropologic material has been destroyed, including the fine collection of primitive Tasmanian and Australian skulls. The greater part of the large collection of instruments is safe and can be restored. Among these are the instruments of Lister and of Moynihan, the Chinese and Japanese collections and the series illustrating the evolution of anesthetic apparatus. Although irreparable loss has been suffered, the destruction is not so great as was at first feared. Enough has been saved for the basis of a new museum, which will continue the Hunter tradition, which has always been fundamental in the college.

Health Conference

The West Virginia State Health Conference will be held in Charleston, November 17 and 18, 1941, with headquarters at the Daniel Boone Hotel. This is a conference of the Public Health Association and the state health officers. There will be several prominent out-of-state speakers, which will be annuonced at an early date. Public health matters of West Virginia will be discussed at this meeting.

The Deaf and the Blind

The West Virginia School for the Deaf and the Blind, at Romney, is making an effort to locate and bring into the schools all children between the ages of six and twenty-one years, who do not have sufficient sight or hearing to enable them to be educated in the public free schools of the state. These schools are maintained for the education of the deaf and blind who are legal residents of West Virginia and who are both physically and mentally fit to receive an education.

Free transportation to and from Romney at the beginning and end of the term is provided by means of bus or train and supervised by attendants. Board, room and school supplies are furnished without charge during the school year, but the child should provide its own clothing unless it is a state charge, in which case clothing is provided.

All inquiries should be directed to Haven D. Umstott, Financial Secretary, West Virginia School for the Deaf and Blind, Romney, West Virginia.

Pharmacopoeial Deletions

The U. S. Pharmacopoeia has always been intended to serve as a guide to the medical profession with respect to the best known and most widely used therapeutic agents of the revision period, with efficient preparations for their administration. One of the first duties of the Committee on Revision, is to make a selection of titles and preparations which meet these specifications.

For this purpose the items official in the current Pharmacopoeia are subjected to critical study and. if, in the opinion of at least two-thirds of the members of the Subcommittee on Scope, any of these substances or preparations have become obsolete or have been replaced by more efficient new remedies or preparations, these items are refused a place in the new Pharmacopoeia. Such items are usually spoken of as "deletions." It should be understood that "extent of use" alone is not accepted as sufficient reason for the retention of any item in the U.S.P., but that a substance must first measure up to the requirement of therapeutic efficiency established by the U.S.P. when compared with the value of other medicinal substances.

At the request of various individuals and groups an attempt has been made to indicate the reasons why some of the more widely known items were deleted. The following statement has been voluntarily prepared by one of the medical members of the Revision Committee to indicate his personal understanding of the views expressed by those who voted for the deletion of the following items:

Acetyltannic Acid and Albumin Tannate: Have not proved efficient as intestinal astringents. There is evidence that high up in the small intestines the tannic acid is changed to sodium gallate, which is

not astringent. Neither tannic acid nor gallic acid appears in the feces. Any astringent action is likely to be exerted in the stomach or duodenum rather than in the intestines lower down.

Aconite, Tincture of Aconite: In fever it has been supplanted by strikingly better remedies. As a vagus stimulant it is not employed, probably because of its lack of certainty, or its lack of safety in the necessary doses.

Acriflavine and Acriflavine Hydrochloride: It was employed extensively in World War I, but since that time its use has steadily declined. It is bacteriostatic rather than bactericidal. Recommended to replace iodine as an application to the skin in preparation for operation, it has been refused acceptance by many surgeons. Similarly in infectious and ulcerative conditions of mouth, bladder, vagina and rectum, its use has steadily declined. The Subcommittee on Surgical Infections of the National Research Council has repudiated it on the ground that it is ineffective in the treatment of wounds.

Ammonium Benzoate, Bromide and Salicylate: Have been used in the fallacious belief that the ammonium radicle is in some way protective to the heart. Ammonium salts are less stable and unnecessary duplicates of the corresponding salts of potassium and sodium.

Aromatic Sulfuric Acid: Formerly used extensively as a solvent for quinine sulfate, and now obsolete.

Arsenic Triiodide: Undesirable to administer both arsenic and iodine in a fixed salt of this type.

Asafetida, Emulsion of Asafetida: Its value in hysterical conditions is questionable. Its use by mouth for flatulency is not justified by results. Its use by rectum in tympanites can be duplicated by pleasanter smelling and more effective agents.

Bismuth Subgallate: It has no advantages over the subcarbonate. Because of the presence of gallic acid, it has produced the erroneous idea that it is astringent.

Calcium Bromide: An unnecessary duplicate with no therapeutic advantages over other bromides.

Calcium creosotate, creosote, creosote carbonate, guaiacol and other creosote relatives are neither antiseptic in the respiratory tract nor expectorant. The local antiseptic value of creosote in a tooth cavity and its deodorizing value in pulmonary tuberculosis were not considered justification for its continuation in the Pharmacopoeia.

Cannabis, Fluidextract of Cannabis, Extract of Cannabis: A little used drug, very variable, and with the easily produced undesirable effects characteristic of marijuana indulgence.

Cantharis, Cantharis Plaster, Tincture of Cantharis: Employed essentially as a local irritant and blistering agent. Blisters have fallen into disuse. As an irritant in scalp lotions and otherwise, the remedy is superfluous.

Capsicum, Tincture of Capsicum: A local irritant with extensive use, but not considered important enough for the Pharmacopoeia.

Carbromal: A mild sedative, closely related to and differing little from the extensively used and better known barbiturates. The amount of bromine in a dose is altogether too small to give a bromide action.

Cinchona, Compound Tincture of Cinchona: As antimalarial no longer employed. For the purposes of a bitter, remedies just as effective but simpler are available.

Compound Mixture of Opium and Glycyrrhiza: Brown mixture represents what now is looked upon as an almost extinct type of galenical. In teaspoonful doses, its antimony and opium are too little to be therapeutically effective.

Compound Powder of Senna (Compound Licorice Powder): As a senna preparation it is complicated by the presence of sulphur, which gives an unduly soft consistency to the stools, and often a very offensive odor.

Copaiba: An old time urinary antiseptic, bad tasting and irritating to the stomach and kidneys. It is not a very effective antiseptic in the urinary tract, and simpler and better drugs for the purpose are available.

Dichloramine-T and Dakin's Solution: Dichloramine-T, the oil-soluble chlorine furnisher, and Dakin's solution (diluted solution of sodium hypochlorite) were deleted on the ground of their proven inefficiency. The water-soluble chloramine-T was retained. For the slow and steady elimination of chlorine, azochloramid in triacetin solution was considered superior and was admitted. The latter is now being extensively employed in Britain in preference to other chlorine antiseptics.

Diluted acetic acid was a "pharmaceutic necessity" in the manufacture of solution of ammonium acetate and vinegar of squill, both of which have been deleted.

Elixir of Glycyrrhiza: The syrup of glycyrrhiza was substituted for the elixir on the basis of its more extensive employment and its freedom from alcohol.

Ethylhydrocupreine Hydrochloride: Introduced for the treatment of pneumonia it has proved too toxic for oral or parenteral use, and ineffective. It is still employed as a local application in pneumococcal infections of the eye but for this use it is rapidly being supplanted.

Extract of Nux Vomica: Of no use as a bitter, and for a strychnine effect it is more rational to employ strychnine salts.

Fluidextract of Belladonna Root: The exclusion of this follows the general principle that, where the dose is very small, such concentrated liquid preparations as fluidextracts are undesirable. It was formerly retained for the preparation of belladonna liniment, but this is no longer a pharmacopoeial preparation.

Iodoform: Vile-smelling and of low rating as an antiseptic. It is rapidly being replaced by more effective agents which lack the disagreeable odor.

Iron: This was elementary iron, in the form of bright wire, filings or powder. It was used in the preparation of syrup of ferrous iodide which has been deleted.

Kino, Tincture of Kino: A tannic acid remedy, which does not reach the lower intestines as such.

Magma of Ferric Hydroxide: It was introduced as an arsenic antidote. At best it is not very efficient, and there are conflicting reports as to any efficiency at all.

Mass of Mercury (Blue Mass): Now considered an obsolete mercury galenical preparation.

Merbaphen: Its use has been largely abandoned in favor of the less toxic and more effective salyrgan which is now admitted to the Pharmacopoeia.

Nutgall, Nutgall Ointment: This is employed for its tannic acid, and preparations of the latter are to be preferred.

Oil of Santal: Irritating to the stomach and kidneys, and not a powerful antiseptic in the urinary tract. Much more effective chemical remedies are now available.

Pepsin: A powerful enzyme that is superfluous in therapeutics. For the digestion of protein it acts best in a nacid medium of pH 1.5 to pH 2.5, and does not act at all in a medium above pH 4.0 to 4.5. In gastric achylia the needed acidity cannot be obtained in the stomach by any doses of acid that it is possible for a patient to swallow.

Pills of Aloe: Drastic cathartics no longer have Pharmacopoeial approval. However, aloe itself has been retained, and also aloin, which is not drastic.

Podophyllum, Resin of Podophyllum: Also a drastic cathartic. Drastics are irritant to the whole alimentary tract, from the stomach down. If catharsis fails to take place, they are capable of producing inflammation of the intestines, and, after absorption, of the kidneys.

Potassium Chlorate: An antiquated mouth astringent. Any internal use for it is not justified.

Powder of Ipecac and Opium: Its main use is to produce sweating and sleep. Its ability to induce copious sweating depends mainly upon the hot drinks with which it is administered and the heavy covering of bed clothes. The ipecac is nauseating, and in this powder can scarcely be said to be used for its expectorant value. The opium is simply "dope", to be better prescribed by itself if it is desired.

Pyrogallol: Not now much used as an antiseptic in therapeutics.

Quinine: This is the pure alkaloid, as distinguished from its salts. It is not used in therapeutics, and is not required as a "pharmaceutic necessity."

Santonin: As an anthelmintic it has given place to newer remedies.

Serpentaria: This was a "pharmaceutic necessity" in the preparation of compound tincture of cinchona which has been deleted.

Sodium Acetate: The potassium salt is preferred and much more in use.

Solution of Ammonium Acetate: Believed to be of no therapeutic value.

Solution of Ferric Chloride, Tincture of Ferric Chloride: The solution was required for the preparation of the tincture. As an antianemia remedy the tincture has been largely supplanted by iron preparations that do not injure the teeth and are less astringent.

Solution of Iron Tersulphate: Formerly used as a hemostatic, this makes a nasty mess when mixed with blood, and is locally irritating and even corrosive.

Spirit of Chloroform: Not desirable as a sedative and not needed as a carminative.

Spirit of Ethyl Nitrite: Not effective as a nitrite, and has no distinctive therapeutic properties.

Squill, Syrup of Squill, Tincture of Squill, Vinegar of Squill: Squill lacks the highest approval as a cardiac drug. Its use as an expectorant is based on erroneous observations.

Strychnine Nitrate: On account of the efflorescence of the sulphate, the nitrate was admitted to

the last revision as a stable salt. However, it has not come into favor, and it was considered unnecessary to admit two strychnine salts.

Sulfonethylmethane: The limitations and disadvantages of "trional" as a hypnotic have greatly lessened its use.

Syrup of Ferrous Iodide: Unsatisfactory as a means of administering either iron or iodine. The dose of each should be separately considered.

Terebene: Neither antiseptic in the respiratory tract, nor valuable as as expectorant.

Theobromine with Sodium Salicylate: Theobromine with sodium acetate is considered better, and it eliminates the chance of harm to diseased kidneys from the salicylic radicle.

Valerian, Tincture of Valerian: Believed to be an overrated drug in hysteria, and too malodorous as a carminative.

Veratrum Viride, Tincture of Veratrum Viride: A dangerously toxic drug, highly variable, and very little used. Its chief employment is in eclampsia, in which extremely large (and dangerous) doses are recommended by its advocates. Reports from many noted obstetricians are not favorable to its use in eclampsia.

Washed Sulphur: Three forms of sulphur were deemed unnecessary for the Pharmacopoeia. Precipitated sulphur and sublimated sulphur are retained.

Yellow Mercurous Iodide: Formerly extensively administered as an oral antisyphilitic, this remedy has been supplanted by more desirable remedies.

Federal Survey of Mental Cases

Dr. Samuel W. Hamilton of the U.S.P.H.S. has been assigned to make a special study of West Virginia's facilities for treating mentally defective. No date has been given out for the beginning of the study, but according to a newspaper article dated August 21, it was indicated that it might be around the first of September.

Governor Neely, in a letter to Surgeon General Thomas Parran of the U.S.P.H.S., wrote: "If possible, I would like the study to include not only our four mental hospitals, but also the two schools for mentally defective children, the out-patient clinical needs of this state, the place of a parole program, and means of establishing mental hygiene programs in our local communities."

Negotiations are now underway for establishing a fifth state hospital and the board of control is considering the old Morris Harvey College property at Barboursville; Alderson Collegiate Institute at Alderson, Greenbrier county, and Pence Springs, a summer resort in Summers county.

Birth Certificate Change

Two changes in the handling of birth certificates were recently announced by Dr. C. F. McClintic, state health commissioner. The first was the discontinuance of the embossed birth notification forms, except to those children whose births are recorded during the year in which they are born.

The second change requires genuine documentary evidence to support all statements as to age, birthplace and parentage for any person over four years of age who wishes to have his birth registered, effective September 1, 1941.

These changes have become necessary because of great demand for birth certificates stimulated by the war and national defense.

The state health department is replacing the embossed birth certification forms, by verification cards, for all delayed birth certificates. These show the name, date of birth and file number of the certificate. They will be suitable for a child's entrance into school or for securing a job in private industry but not on national defense contracts where a certified copy of the birth certificate is usually required.

On and after September 1 no delayed birth certificates will be accepted for registration unless filled out on the new form being issued by the division of vital statistics. Each form must be supported by genuine documentary evidence to prove the statements as to age, birthplace and parentage. Three documents with dates five years previous to the date of application, will be required as evidence or two documents, if one bears a date before the child reached the age of three years. Only one affidavit of a friend or relative will be allowed as documentary evidence. Such evidence may include hospital records, the family Bible, insurance policies, baptisimal, cradle roll or other church records, record of military service, or employment, marriage license, etc.

West Virginia in adopting these new regulations is following the request of the Bureau of the Census in setting up a standard, uniform form for birth registration. This is being done at the request of the Army, Navy and the Department of Commerce, so that every citizen may have reliable evidence of his American citizenship.

Academy of Ophthalmology and Otolaryngology

The forty-sixth annual meeting of the American Academy of Ophthalmology and Otolaryngology will be held at the Palmer House, Chicago, October 19-23.

The program consists of one general scientific meeting on the morning of the first day, separate programs for the two specialties on alternate afternoons and instructional courses every morning beginning on Tuesday.

The feature of this year's general opening meeting will be a symposium on vertigo, with Dr. Francis H. Adler, Philadelphia, representing ophthalmology; Dr. William J. McNally, Montreal, otolaryngology, and Dr. Bernard Alpers, Philadelphia, neurology. Among papers to be presented will be:

Dr. Alfred W. Adson, Rochester, Minn., "Surgical Treatment of Vascular Diseases of the Orbit."

Dr. Albert N. LeMoine, Kansas City, Mo., "Allergy and Ophthalmology."

Drs. John H. Dunnington and Maynard Wheeler, New York, "Operative Results in 200 Cases of Convergent Strabismus."

Dr. W. F. Petersen, Chicago, "Otolaryngological Problems and the Weather."

Dr. Mark J. Schoenberg, New York, "The Problem of Preventing Partial or Total Loss of Vision in Glaucoma Patients of Eye Clinics."

Dr. Charles T. Porter, Boston, "Practical Uses of Chemotherapy in Ear, Nose and Throat Work."

Dr. Rea E. Ashley, San Francisco, "The Use of Urea in Certain Diseases of the Ears, Nose and Throat."

Dr. Alfred J. Cone, St. Louis, "Treatment of Sinus Diseases in Children."

Dr. Frederick T. Hill, Waterville, Maine, "What Otologists Can Do for Defective Hearing."

During the convention there will be various meetings of small groups, including the "Teachers' Section," secretaries of local eye, ear, nose and throat societies and alumni organizations. The meeting of the teachers' section will be concerned especially with the rôle of the academy in national defense during the present emergency. There will also be a scientific exhibit that will include such subjects as "Ocular Conditions in Children Due to Systemic Disease," "Conduction of Sound in the Ear," "Hemophilia and Other Blood Dyscrasias as Manifest in the Eye, Ear, Nose and Throat," "Cancer of the Larynx" and "Significance of the Eyegrounds in the Problem of Hypertension."

Woman's Auxiliary

Mrs. Samuel Clark Red

The medical auxiliary was saddened by the news of the death of Mrs. Red on August 9, following a stroke a few days previous. Mrs. Red was born March 9, 1877 in Waco, Texas, attended public and private schools in Waco and was graduated from the old Waco Female College in 1894. She married Dr. Samuel Red of Houston, Texas, in December, 1902. Her town house and Bay Shore home have been centers of entertainment for her eight children for years. She was active in many cultural and charitable societies and distinguished herself by contributions to papers and magazines. Mrs. Red has written a history of the practice of medicine in Texas and the proceeds from the sale of her book were set up as a student loan fund for the aid of junior and senior medical students.

In May, 1922, at St. Louis, Mrs. Red organized the Woman's Auxiliary to the American Medical Association.

Mrs. Red will be remembered as a visitor and speaker at the May convention of the State Medical Association and we feel privileged to have met her at one of the last public appearances of her busy and successful life.

Military Sanitation

Although the problems of military field sanitation are important and complicated, "they are less serious and less difficult to solve than are some of those created by contact between the troops and the civilian population," W. A. Hardenbergh, Col., Sanitary Corps, United States Army, Washington, D. C., declares in the July-August issue of *War Medicine*, published bi-monthly by the American Medical Association, Chicago, in cooperation with the Division of Medical Sciences of the National Research Council, Washington.

For the solution of these problems, Col. Hardenbergh says, "efficient local and state health departments are needed, with the fullest and most sympathetic cooperation given and received at all times. The present arrangements contemplate such cooperation, with an officer of the United States Public Health Service acting as liaison officer, in order that the fullest possible health protection can be obtained by the joint action of all agencies engaged in health work."

County Society News

Cabell County

The regular monthly meeting of the Cabell County Medical Society was held on Thursday, August 14, at the Hotel Prichard, at 8:30 p. m. Dr. Warren T. Vaughan of Richmond, Virginia, presented a talk on "Problems in Allergy of Interest to the General Practitioner."

COLE D. GENGE, *Secretary*.

Logan County

Dr. U. C. Lovejoy, is going to Nashville, Tennessee, to take a fellowship in gynecology and obstetrics at the Vanderbilt University Hospital. He will be gone for two or three years.

Potomac Valley

The Potomac Valley Medical Society met on August 20, at the McNeill Hotel, Moorefield. A dinner was served to the members preceding the business meeting. President J. A. Newcome presided and the guest speaker was Dr. Max O. Oates of Martinsburg.

E. A. COURRIER, *Secretary*.

Health Department Personals

Dr. Wm. B. Bailey is acting health officer for Monongalia county, having come from Belaire county, Ohio, and succeeds Dr. E. G. McGavran who has left Morgantown to become health officer for St. Louis county, Missouri.

* * * *

Miss Helen Howell who has been director of nurses' education at the public health training center, Morgantown, will be associate professor of public health nursing at Vanderbilt University.

* * * *

Dr. H. R. DuPuy, formerly of Oakland, Maryland, is the new health officer of Berkeley county.

* * * *

Dr. Earl H. Kirk of Pt. Pleasant and Dr. T. H. Millman of Pineville have gone to Hot Springs, Arkansas to attend a session on venereal diseases. Dr. Millman has been appointed director of Logan county's venereal disease project.

* * * *

Dr. W. A. Bevacqua, health officer of Wood county, has resigned as of September 1, to enter private practice in Parkersburg.

Medical Preparedness

Selective Service

The following article was prepared for the West Virginia Medical Journal by L. Rush Lambert, M. D., of Fairmont, Major in the Medical Corps.

The Selective Service and Training Act of 1940 provided the legal means of establishing the Selective Service System. Under this law there is ample opportunity for patriotic service to the country, not only for men available for military service but also for many citizens who may volunteer their services for the operation of the Selective Service System.

The medical part of the plan concerns all physicians of this state, although, unfortunately, the weight of the burden is being carried by a minority of the physicians. The medical plan at the inception of the Selective Service System was briefly as follows: Each state was subdivided into local board areas, there being one board in each county, and where the population is dense, a local board for approximately every thirty thousand population. There are ninety local boards in West Virginia. There are one or more examining physicians for each board. There are also seventeen medical advisory boards in the state composed of specialists and general practitioners. After the registrant has been examined by the examining physician he is, if considered qualified for general military duty, sent to an induction station where he receives another or final examination. At the induction station he is either accepted or rejected for military service.

There has been much comment and criticism in the newspapers concerning this plan and the large number of rejections at the Army induction stations. These rejections have been embarrassing to the registrant as well as the examining physician. In many instances the registrant, after receiving his first examination by the examining physician for the local board, makes all preparations for entering the Army. He leaves his work, possibly disposes of his car, bids farewell to his family and friends and starts for the induction station, only to be returned home within a day or two, having been rejected for some defect that was not discovered by the examining physician of his local board.

Some of the reasons for these rejections are:

At local board examination: The attitude of personal interest; desire to fill quota; inexperience and unfamiliarity with regulations; imperfect and in-

complete examinations; lack of facilities and personnel.

At Army induction station: The attitude of Army interest; more exacting examination by disciplined team of specialists.

In order to correct this situation measures are being taken to insure more uniformity in both the interpretations of the regulations and the examination by Selective Service and the Army. The Army has authorized the trial of a plan whereby the registrant is given only one examination which is final. The examination is given within approximately thirty days of the time of the registrant's induction. After receiving this examination the registrant immediately knows whether or not he is going to be taken into the Army, and he can make his plans accordingly.

Briefly, the plan for West Virginia is as follows: There will be seven examining stations in the state located at Charleston, Huntington, Parkersburg, Wheeling, Clarksburg, Martinsburg and Beckley. The examining board will be composed of Army personnel augmented by several local physicians at each of the stations. It is contemplated that the examining board will examine registrants at each station approximately every thirty days for a period of three days. About one hundred and fifty men will be examined each day. In order to make the plan work it will be necessary to obtain the services of at least two internists, or general practitioners, who can examine the heart and lungs; one eye specialist; two ear, nose and throat specialists; one or more psychiatrists. These specialists will assist the traveling board composed of Army personnel, and will receive fifteen dollars ($15.00) per day for their services.

It seems to be the consensus of the physicians that it will be a lesser expenditure of their time and relieve them of the considerable drudgery connected with examinations in their offices if this plan is put into effect. It is felt that if a sufficient number of physicians will volunteer their services for this work, it will greatly lessen the tremendous load carried by a minority of the physicians of this state without any remuneration, and make the examinations more uniform. According to the A.M.A. directory there are about 1,800 physicians in West Virginia, and approximately 1,300 of these are members of the Association. There are about 370 physicians in this state now serving as examining physicians and about 120 serving as members of the medical advisory boards. There is also one physician on each appeal board.

Within the next week or more physicians, in or near cities in which the examining stations will be located, will be asked to volunteer their services as members of the examining board. If a sufficient number volunteer it will mean that each physician will be called on for not more than one day each month, or possibly less than one day each month. Questionnaires will be mailed to the physician and the questionnaire should be executed and returned promptly to the secretary of the local medical society or wherever directed.

The Navy Needs More Doctors

You are of course aware that the Navy has been greatly expanded over its prewar peacetime size. In 1939 we had less than 100,000 men. Recently the Congress has authorized a Navy personnel of over 350,000 men, not counting the 50,000 men of the Marine Corps.

The Medical Corps of the Navy is assigned to the duty of taking care of the health of this personnel. As a consequence, more doctors are required to match the increase in the number of men. This period of emergency began with 850 doctors, and the Navy needs three times that number. The Navy personnel, including medical officers, is enrolled through voluntary application. Selective service has not been applied to the Navy. Up to the present time we have been receiving a very satisfactory response from many doctors who have joined the United States Naval Reserve and volunteered for active duty, but the need for more volunteers has come up.

The Fifth Naval District, composed of Virginia, West Virginia, Maryland and the seaboard counties of North Carolina is short about sixty medical officers. There are vacancies for that number now existing, especially for young medical men under 35 years of age, although doctors up to the age of 50 are eligible for a few vacancies.

Any doctor who desires more detailed information will be furnished it by writing to The District Medical Officer, Naval Operating Base, Norfolk, Virginia.

Selection of Defense Doctors

In the interests of national defense, the establishment at the earliest possible moment of a Federal agency for the procurement and assignment of

physicians for military, civilian and industrial service is urged in an editorial in the July-August issue of *War Medicine*, published bi-monthly by the American Medical Association, Chicago, in cooperation with the Division of Medical Sciences of the National Research Council, Washington, D. C. The editorial says:

"At the annual session of the American Medical Association held in Cleveland in June, 1941, the Committee on Medical Preparedness brought to the House of Delegates a resolution urging the establishment of a central agency, to be known as the Procurement and Assignment Agency, which would enable the government to select more promptly and more wisely those physicians necessary for military, civilian and industrial service.

"Subsequently this resolution was endorsed by the Health and Medical Committee, which has been assigned to the (Federal) Coordinator for Health Welfare and Related Activities.

"In all the warring nations the problem of medical personnel is prominent. Articles in British medical journals frequently reflect the difficulty of maintaining in Great Britain the social medical system, which includes the physicians who carry on the panel practice, of supplying industries with the innumerable physicians required under present regulations and of giving medical attention to the Army, the Navy, the Royal Air Force and the civilian defense groups. A note from Germany indicates that because of the depletion of the medical profession by emigration and the needs of the military services there are now some areas in which there is available only one physician to every 4,500 people.

"Already it is apparent that the procurement and assignment of physicians in the United States for some of the innumerable calls which are likely to be made on them in the near future are going to be a task that will take the best available information and organizational ability.

"Already the American Medical Association has available on a punch card system the names of more than 160,000 American physicians licensed to practice, with complete information regarding their ability and availability for many different types of medical service. Nevertheless, the utilization of this material must await the establishment of some agency capable of acting with authority for purposes of procurement and assignment of physicians in times of emergency.

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"After the session of the House of Delegates of the American Medical Association the resolution was sent to the various persons and the committee who are mentioned in the final paragraph. If such an agency is to be of the greatest possible service, it should be organized and ready to function before the moment when it is most needed. It would be well if the national administration could give prompt consideration to the desirability of establishing an agency of this kind at the earliest possible moment."

Health Safeguard

On July 11, President Roosevelt signed H.R. 2475, prohibiting prostitution within such reasonable distance of military and naval establishments as the Secretaries of War and Navy shall determine to be needful to the efficiency, health, and welfare of the Army and Navy. This law will remain in effect until May 15, 1945. The Secretaries of War and of the Navy and the Federal Security Administrator are directed to take such steps as they deem necessary to suppress and prevent violations of this law and to accept the cooperation of the authorities of states and their counties, districts, and other political subdivisions in carrying out the purposes of the law. It is specifically provided, however, that nothing in the law shall be construed as conferring on the personnel of the War or Navy Department or the Federal Security Agency any authority to make criminal investigations, searches, seizures, or arrest of civilians charged with violations of the law.—(Public Law No. 163.)

Chiropody Corps

A subcommittee of the Senate Committee on Military Affairs held a public hearing, June 26, on S. 1459, a bill proposing to establish a Chiropody Corps in the Medical Corps of the United States Army, the subcommittee being composed of Senator Johnson of Colorado, Senator Chandler of Kentucky, and Senator Lodge of Massachusetts. The enactment of the bill was opposed by Col. George F. Lull, United States Army Medical Corps, who testified on behalf of the Surgeon General at the hearing. Col. Lull represented the Surgeon General as being of the opinion "that in the military service

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Silver Picrate, Wyeth, has a convincing record of effectiveness as a local treatment for acute anterior urethritis caused by Neisseria gonorrheae.[1] An aqueous solution (0.5 percent) of silver picrate or water-soluble jelly (0.5 percent) are employed in the treatment.

1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph., Gon. & Ven. Dis., 23, 201 (March), 1939.

A complete technique of treatment and literature will be sent upon request

*Silver Picrate is a definite crystalline compound of silver and picric acid. It is available in the form of crystals and soluble trituration for the preparation of solutions, suppositories, water-soluble jelly, and powder for vaginal insufflation.

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there is no need in military hospitals for chiropodists. He feels that this work can all be done under the supervision of orthopedic surgeons who are trained for this duty. * * * to sum it all up I would like to say that the Surgeon General's opinion is that chiropodists are not needed as commissioned officers of the United States Army. That is all." No further action has been taken by the committee on the bill.

Blood Banks

H. R. 4293 has passed the House and Senate, providing that any person who furnishes blood from his or her veins for transfusion into the veins of a person entitled to and undergoing treatment at government expense or who shall furnish blood for blood banks or for other scientific and research purposes, in connection with the care of any person entitled to treatment at government expense, shall be entitled to be paid therefor, for each blood withdrawal, a sum not to exceed $50.—Ref. FLB—4.

Office of Civilian Defense

The United States Director of Civilian Defense, Mayor F. H. LaGuardia, announces the training of 100,000 volunteer nurses' aides during the next twelve months, in collaboration with the American National Red Cross and the major hospitals of the country. The program is in preparation for a great expansion in hospital beds which may be required during the national emergency, at a time when the already overburdened nursing facilities of civilian hospitals are seriously depleted due to the demands of our military and naval establishments and the increasing needs of public health and industrial hygiene services.

Mayor LaGuardia has appointed the following Medical Advisory Board to assist the Medical Division of the Office of Civilian Defense:

Dr. George Baehr, New York, chairman; Dr. Robin C. Buerki, Madison, Wisconsin; Dr. Elliott Cutler, Boston, Massachusetts; Dr. Oliver Kiel, Wichita Falls, Texas; Dr. Albert McCown, Washington, D. C.; Dr. Fred Rankin, Lexington, Ky.

The symptom complex which is commonly called the onset of tuberculosis, is not the onset but the stage of active progression, characterized by cough, fever and night sweats.—Edmond R. Long, M.D.

SAINT MARY'S HOSPITAL
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A private hospital with a capacity of 175 beds under the direction of The Sisters of St. Joseph. It has been recognized as first class by the American College of Surgeons since the organization of the College in 1915.

It is equipped with the most modern X-ray, Deep Therapy, Physiotherapy and Fever Machines and has complete Pathological and Clinical Laboratories. Full-time physicians are in charge of these departments.

Approved for Serology by the West Virginia State Department of Health.

Weekly Out-Patient Tumor Clinic as suggested by the American College of Surgeons.

BOOK REVIEWS

New and Non-official Remedies

NEW AND NON-OFFICIAL REMEDIES, 1941. Containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1941. $1.50, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

The descriptions of accepted articles are based in part on investigations made by, or under the direction of the Council and in part on evidence or information supplied by the manufacturer or his agents. Statements made by those commercially interested are examined critically and admitted only when they are supported by other evidence or when they conform to known facts.

During the year 1941, descriptions of such other medicinal substances as are accepted by the Council for new and non-official remedies will be published from time to time in the *Journal of the A.M.A.*, and will be reprinted in the form of supplements, which will be sent to those who purchase this book.

Necropsy

NECROPSY, by Bela Halpert, M. D., C. V. Mosby Company. 75 pages. $1.50.

A guide for students of anatomic pathology by Bela Halpert, M.D., Assistant Professor of Pathology and Bacteriology, Louisiana State University School of Medicine, and visiting pathologist, Charity Hospital of Louisiana, New Orleans. This text is based upon the principles of the method used by Anton Ghon. It considers in detail the topography and anatomy of the various organs, with special attention to regional lymph nodes and tributary blood vessels.

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impaired. (2) the "Kinkelstein method", based on the theory that some carbohydrates are especially likely to cause fermentation and prolong diarrhea. His method consisted of high protein feedings in the form of protein milk, sometimes with added carbohydrate, and continues to have many advocates, especially in breast-fed infants. One of the successful modifications has been casec (calcium caseinate), which can be used for both breast-fed and bottle-fed infants.

In recent years, the use of raw apple and weak tea for treating diarrhea has had various proponents.

Based on their experience with apple, Winters and Tompkins devised a mixture of pectin, agar and dextri-maltose which was more successful. Others have privately confirmed their finding that a mixture of this nature is of value in diarrhea. Various reasons for the effectiveness of both pectin and agar have been advanced but none has a background of experimental proof. It has been claimed that pectin is bactericidal, that its constituent galacturonic acid functions as a detoxifying agent, that it absorbs toxins and enmeshes bacteria, that its hydrophilic nature prevents dehydration, and that it is soothing to an inflamed gastrointestinal tract. Bulk is the only valuable characteristic advanced for the use of agar.

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Caisson Disease Treatment

New concepts of treatment of caisson disease, sometimes called the "bends" or compressed air sickness, are presented in *The Journal of the American Medical Association* for August 23 by I. J. Thorne, M.D., New York, in a study based on 300 patients observed at the Queens-Midtown tunnel project in New York City, all of whom survived.

"Caisson disease," he says, "is an industrial hazard encountered in the building of bridges, tunnels and skyscrapers where compressed air is employed. In the past this malady has caused permanent disability and death in many instances."

The disease is caused by nitrogen gas which forms gas bubbles or emboli in the tissues and blood stream which interfere with normal life processes. Further explaining the condition, Dr. Thorne says that "When a person who has worked in compressed air is exposed immediately to normal atmospheric pressure, a phenomenon occurs similar to the sudden opening of a bottle of charged water. For example, bubbles of carbon dioxide will evolve from the charged water and will continue until equilibrium of partial pressures of carbon dioxide in the atmosphere and in the liquid is obtained. A similar phenomenon occurs in the blood and the body tissues under sudden release of pressure. The dissolved nitrogen gas evolves in the form of bubbles, producing blocking of the circulation and tearing of tissues with resultant symptoms of caisson disease."

Regarding treatment, he says that "The essential treatment of caisson disease is the return of the patient to the compressed air. In previous years, men who were seized with an attack voluntarily returned to the compression chamber for the relief of their symptoms. Today this treatment is given in a compression chamber known as a 'medical airlock.'

"Recompression should be started as soon after the onset of symptoms as possible, because the sooner the bubbles of nitrogen are redissolved the sooner will the circulation be established and pain relieved. The possibility of permanent damage to vital structures such as the brain and spinal cord will be materially reduced by immediate recompression. It has been noted that if treatment is delayed following the onset of symptoms a higher pressure

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is necessary to give relief. Long delay in recompression may result in permanent injury to the cord because of anemia as a result of the circulation being blocked by nitrogen emboli. It is true that recovery will occur in certain mild cases without recompression, but there are no criteria by which we can determine which cases suddenly become serious. It is most advisable therefore to treat all definitely diagnosed cases of the disease by recompression immediately.

As for preventive measures, he points out that "In addition to nitrogen embolus formation, certain secondary conditions predispose an individual toward caisson disease. They are age, systemic disease, obesity, alcoholism and fatigue. * * *

American Hospital in Nanking

The University Hospital of Nanking, supported by American donations, handled an average of 9,702 patients each month in the last sixth months, a report issued by United China Relief announced today.

Through bombings, siege and throughout the Japanese occupation of the former Chinese capital, the doors of the hospital and clinics have remained open, the report said. No person was turned away because he was too poor to pay. For more than three years the hospital has been the only place for first-class medical care for Chinese in and around Nanking.

The American staff, in addition to its heavy burden of work, has found time to train Chinese internes to take on the increased responsibilities of the expanding services. One hundred girls have been in attendance each of the past two years at a nurses' training school attached to the hospital.

The University of Nanking, part of whose staff stayed behind to carry on the work of their hospital, is one of the American christian colleges now serving the Chinese people in many ways. Hospitals are maintained throughout the country by these schools, and two first-class medical schools attached to the universities have managed to continue their training, despite the difficulties of war.

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IMPORTANT NEWER CONCEPTS CONCERNING CANCER OF THE INTESTINES AND THEIR BEARING ON MANAGEMENT*

By J. ARNOLD BARGEN, M. D.
Rochester, Minnesota

INFORMATION accumulated from clinical and pathologic observations of the inception, growth and effects of malignant disease of the intestines will be reviewed. These observations suggest that the search for a single etiologic factor, such as a virus, a chemical reagent, a microorganism, or other extraneous excitant, may be in vain. The basic problem seems to be one of disturbance of metabolism modified by many secondary and associated factors.

There seems to be a constant fight between the internal metabolic forces which control growth. Division, growth and multiplication are constant characteristics of all tissue cells. Most of the time these processes result in a useful, purposeful division and differentiation and cells reach that stage in the development of tissue at which, having performed their function, they die and are replaced by others. Some cells of the body, however, undergo a wholly useless and purposeless division and the new cells which result have the same anarchic characteristics. Thus, by continued multiplication, a parasitic mass of cells is formed which destroys the tissues of the host and by sapping vitality destroys him also.

There seems to be a constant battle between the cells of the wall of the bowel to demonstrate metabolic superiority of the normal processes of growth over the anarchic processes of growth. Fortunately, only occasionally does the anarchic response obtain the upper hand and even then it is limited to some cells only. Such a response may occur

THE AUTHOR

Dr. Bargen, graduate Rush Medical College; interned St. Luke's Hospital, Chicago; postgraduate Mayo Foundation, University of Minnesota; Associate Professor of Medicine, Mayo Foundation, University of Minnesota; secretary, American Gastro-Enterological Association; secretary, Section on Gastro-Enterology and Proctology of the A. M. A.

*Annual Oration on Medicine of the West Virginia State Medical Association meeting in Charleston, West Virginia, May 12 to 14, 1941.

at any age and I have seen frank carcinoma of the large intestine on examination of a boy, seven years of age, and adenomatous polyps on examination of a patient two years of age. From then on to old age the incidence of malignant disease becomes more and more common; this observation suggests that this lawless response is more likely to appear with advancing years. This might indicate that in the early years the normal metabolism of cells proceeds at a quickened pace, but with the slowing of the so-called normal, that is, as the human body advances in years, the resistance of the entire organism against the harmful influence is lowered gradually. Indeed, is this not exactly what takes place?

It seems to be generally agreed that a full-blown carcinoma represents the ultimate phase of a definite series of changes rather than a mere fortuitous incident in the life of the tissues.

SUBCLINICAL CHANGES OF TISSUE

Clinical evidence is suggestive of the existence of a potentially malignant state of the tissues of the intestinal wall. In a recent review of the results obtained from surgical treatment in a series of sixty-one cases of carcinoma of the intestines which measured less than one inch (2.5 cm.) in diameter, the high proportion of instances of so-called local recurrence of the growth years after total eradication of the original small growth was noted with interest.[4] That eradication of the primary growth had been complete was attested by both the surgeon and the pathologist. It became evident that the so-called local recurrence represented a second growth arising in the epithelium adjacent to, yet some distance from, the original neoplasm. This observation led to a careful analysis of the mucous membrane and wall of the bowel surrounding the primary growth in an endeavor to identify any changes which might be of a potentially malignant nature. Sessile outgrowths from the mucous membrane which measured from one to four mm. in diameter were found. At times these were so small that they could be seen only with the hand lens. They were disseminated over the mucous membrane for at least 15 cm. away from the margin of the growth or to the edge of the resected bowel. They were usually multiple, although not numerous; an average of only three or four were present per specimen. However, in some cases an irregularity of the surface of the mucosa was observed which gave an appearance of a "pile carpet" brushed the wrong way.

CHANGES IN SUBEPITHELIAL TISSUE

Other important changes were found in the subepithelial tissue of the available segments of intestine, particularly in the muscularis mucosæ and in the lymphoid structures. The amount of lymphoid tissue in the subepithelial layer was variable. It occurred as aggregations of lymphocytes situated immediately below the epithelial layer. These aggregations of lymphocytes seemed to arise as perivascular infiltrations. The number of such lymphoid aggregations was variable as was the size of the individual aggregations. When a lymphoid aggregation became very large, it seemed to disrupt the continuity of the muscularis mucosæ. Under pathologic conditions it became encapsulated and developed a well-marked secondary center which appeared as a collection of pale-staining cells in the center of the lymph follicle. When this stage had been reached, secondary changes became evident in the overlying epithelium. In this series of cancerous colons this disruption of the muscularis mucosæ with the appearance of the encapsulated follicles and the epithelial changes overlying them occurred regularly, whereas such changes were not seen in sections taken from 100 normal colons. The changes seen in the epithelium overlying these follicles with secondary centers were an irregular proliferation of the glandular structures overlying the follicles with the production of atypical glands and cyst formation. These changes appear to be secondary to, and the direct result of, the presence of the underlying

follicles. The subsequent changes seemed to be more or less mechanical in origin. In some instances the follicles would rupture and the epithelium would prolapse into their substance. Atypical glandular structures composed of primitive epithelial cells thus might escape into the loose submucosal connective tissue.

Here and there, too, the follicles had ruptured into the lumen of the bowel causing ulceration. In the process of healing of the ulcers thus formed, epithelial cells seemed to have been trapped in the deeper layers at the base of the ulcer. These cells were more primitive and less differentiated than the usual epithelial cells. Occasionally a small patch of epithelium had become isolated from the rest of its stratum by a circle of large follicles. Progressive enlargement of these follicles had destroyed the muscularis mucosæ and the epithelium had become "pegged down" to the underlying submucosa. The surrounding muscularis then apparently had contracted and the tissue enclosed had been pushed up as a little elevation. This was apparently the small nodule which I have described and which probably is the earliest stage of an adenoma. Subsequent stages consisted of an irregular hyperplasia of the glandular structures in this isolated portion of the mucous membrane and finally the development of secondary cytoplasia. Then because of traction and propulsion a structure resembling a polyp might develop. The lymphoid tissue at the base of this then slowly was replaced by fibroblasts and ultimately the polyp possessed a well-developed fibrous core.

SINGLE AND MULTIPLE POLYPS

There are probably several methods of inception of intestinal polyps; the subepithelial changes which have just been described in detail represent only one source and process of their origin. Polyps of the intestine can be divided readily according to their anatomic structure. Adenomatous polyps are composed largely of epithelial cells in various stages of development. Inflammatory polyps are largely composed of inflammatory granulation tissue mixed with irregular distorted epithelial glands. Polyps may occur singly or there may be many in a single colon. Subclinical inflammatory changes beneath the polyp may be entirely absent and the polyp may appear to have started as an epithelial hyperplasia per se. Once the polyp has been initiated, its growth seems to be relentless although it may be slow. The change from the epithelial hyperplasia through the stage of cytoplasia is but a short step to the adenocarcinoma. Definite evidence is available that a single polyp may eventuate in carcinoma.

Some years ago whenever a patient who had a small single polyp in the rectum came to the Mayo Clinic it was suggested that the polyp be eradicated, but this was not always done. Often years later the patient who had not permitted removal of the polyp would return to the clinic and he would have a carcinoma at the identical site where the polyp had been. Careful pathologic examination of these single polyps at various stages of their development has demonstrated cancerous change in the serrated portion long before cancerous change occurred at the base. In most adenomatous polyps of any size changes are present which can be designated as adenocarcinoma grade one. Some very small lesions are found to be cancers of higher grade.

MULTIPLE POLYPOID DISEASE

Agreement has been general concerning the pathology of multiple polypoid disease and the term "multiple adenomatous disease" seems suitable, inasmuch as it describes the pathologic nature of the polyps. There are several clinical types of adenoma of the intestines. One, or a few, adenomas may be found in widely separated portions of the intestinal lining. There may be disseminated adenomatosis, in which the lesions are scattered irregularly in different portions of the intestinal lining. There also may be diffuse adenomatosis, in which the entire

lining of the large intestine is densely covered with adenomas, so densely that little, if any, normal mucous membrane can be observed grossly. The occasional and disseminated polyps may vary from one or two mm. to several centimeters in diameter. In cases of diffuse adenomatosis, the tendency is for most of the polyps to be of similar size, with an occasional much larger one protruding above the field. Finally, tiny mammillations throughout the intestinal mucosa and, also, diffuse mucosal hyperplasia frequently have been observed. The association of enlarged lymph follicles and lymphocytic infiltration with the earliest manifestations of polyps has been noted. In some of these cases, although the mucosa is intact, it seems to be wavy and undulating. Infiltration of the interstitial tissue with lymphoid cells and plasma cells seems to be a constant finding in such cases. Localized, benign hyperplasia of intestinal glands occasionally is observed; the phenomenon appears at times merely as a lengthening of an isolated group of glands. Tiny excrescences, here and there, representing clusters of adenomatous glands, can be seen in isolated places.

POLYPOID HYPERPLASIA

It has been estimated that some form of polypoid hyperplasia of the colonic mucosa is found on examination of 50 per cent of individuals who are more than thirty years of age. All these regions of polypoid hyperplasia are marked by irregular arrangement and size of cells, disorderliness of structure, mitotic figures and hyperchromatism. Proliferation, as has been pointed out, is one of the fundamental physiologic properties of cells. When the factor which limits such proliferation in the colon has been disturbed, polypoid overgrowths of mucous membrane occur.

Frank carcinomatous change can be seen in the tiny mucosal excrescences. However, readily demonstrable carcinomas usually are found only in the larger adenomas. In a recent study of multiple adenomatous disease, frank carcinoma occurred in 62.5 per cent of all cases. In 25 per cent of these, multiple carcinomas were at hand. In 69 per cent, the polyps were distributed throughout the large intestine. The common site of most diffuse involvement was in the left half of the large intestine. The rectum escapes involvement only rarely. In 35 per cent of the cases similar conditions could be established as having affected parents or siblings. This phase of the problem will be considered later in this paper.

Among individuals who have multiple adenomatous disease of the intestines and whose intestinal mucous membrane has undergone excessive hyperplasia, the anarchic factor of growth seems to have the upper hand in a most striking manner. A study of polyps of the colon suggests very strongly that an influence is exerted on the epithelium which results in abnormal proliferation of cells.

THE FACTOR OF PRIMARY CARCINOMA

When serious thought is given to the foregoing facts, the question arises, why do carcinomas of the intestines ever occur singly? Nevertheless, solitary overgrowths of epithelium originating in isolated parts of the mucous membrane of the wall of the colon still represent the most common type of carcinoma. It is recognized, however, that the epithelium adjacent to the carcinoma reveals cellular variations from the bizarre carcinoma cell to the normal goblet cell. There is no evidence of protective influence against invasion of the apparently normal cells in the face of the carcinoma. It is seen then that when the anarchic process of growth has taken the upper hand a parasitic mass of cells has formed which, although beginning in a single spot has the tendency to spread distantly.

In the study previously mentioned of sixty-one cases in which carcinomas measured less than 2.5 cm. in diameter (one inch) it was found that whereas the ultimate prognosis is markedly affected by the grade of the

lesion and the amount of bowel wall invaded, a much more important factor is the factor of the potentially malignant state of the bowel wall adjacent to the growth. Of the sixty-one patients only thirty were alive and well at the end of five years. The size of the individual lesion and the type of surgical procedure were not the determining factors in the final outcome. From the point of view of recurrence of malignant disease, the results were at first discouraging, but a further analysis of the wall of the intestine revealed that the question was not one of recurrence of the original growth but rather the occurrence of new growths. In other words, new carcinomas distant from the original growth caused the fatal outcome. It is entirely probable that so-called recurrent carcinoma in many instances has been the appearance of new carcinoma and not the recurrence of an original growth.

MULTIPLE CARCINOMAS

Evidence for this exists in the not uncommon occurrence of two or more primary carcinomas of the bowel in a single individual at the same time. Some years ago Rankin and I studied a group of sixteen cases of multiple carcinomas of the large intestine and just recently Schweiger and I have reported twenty-three more. In these thirty-nine cases, multiple individual carcinomas were present in an otherwise normal intestine at the time the patient made his or her first appearance for examination. No grossly demonstrable intestinal polyps between the lesions, or anywhere else in the intestine were found. The mucous membrane between the several carcinomas, grossly, appeared entirely normal.

There is little to be said here regarding single carcinomas of the large intestine. As we understand the problem today, they still represent the most common type of malignant lesion. The information available, however, cannot stress too emphatically the importance of ever being on the alert for new malignant lesions of this region when once such a lesion has been found.

INFLAMMATORY CHANGES

Undue irritation maintained over a prolonged period and long persistent and recurrent chronic inflammation have been thought to be factors in the production of, or at least, in the susceptibility of an organ to, carcinoma. There is probably no region in the human body where the inflammatory factor is illustrated better than in the large intestine and particularly in such a disease as chronic ulcerative colitis of the streptococcal variety (thrombo-ulcerative colitis). The wall of the large intestine is attacked and great stretches of mucous membrane are destroyed. Inflamed islets, tags, and strips of mucous membrane may be left. In the early stages of the disease rather superficial abscesses are seen associated with cup-like areas of mucosal denudation. At the periphery of these abscesses there will be ridges, with tufts of fairly intact mucous membrane. This first piling up of tissue, then, is not the result of true hyperplasia. With the progression of massive destruction of tissue, a variety of pathologic change follows: nodular tags, shreds of thickened tissue, bridges of undermined mucosa and long, polypoid tufts of mucosa are left. Thus, what appear grossly to be polyps may not represent adenomatous hyperplasia.

TRUE ADENOMAS

True adenomas, however, are observed as a sequel to these changes. This is particularly apparent as the process of healing in the colon seems to gain the upper hand. The tufts of mucous membrane, in what is apparently a regenerative effort, begin to give evidence of true and easily demonstrable hyperplasia. They may project into the lumen and drag the submucosa with them; stalks may develop. In many instances, especially at their tips, there is evidence of a fairly rapid and poorly controlled effort of growth. These tufts of mucous membrane appear in an already badly diseased and distorted colon and so a very different picture is seen from that encountered in cases of multiple adenomatous disease. With secon-

dary infection or remission, a not infrequent occurrence, débris and scar tissue choke the glands and the "colitis polyposis cystica" of Virchow follows. Mucosal tags obtained in cases in which lesions of chronic ulcerative colitis have undergone healing and the patients have returned for clinical observation, occasionally years after all active symptoms of disease have subsided, have the gross appearance of adenomatous polyps and microscopically many of them are true adenomas. In some cases of chronic ulcerative colitis, transition from ulceration, through adenomatous change, into malignancy has occurred.

POLYPS CLASSIFIED

These observations have suggested a classification of these polyps into pseudoadenomatous, adenomatous and carcinomatous. Although polyps of the first group appear adenomatous at first glance, on more detailed scrutiny the glandular hyperplasia is recognized as a benign regenerative process. The cells seem to secrete mucus in normal to excessive amounts, so that large, cystic glands may be seen. Thus, although some of the pseudoadenomatous polyps are extremely hyperplastic, the hyperplasia is an orderly, functioning response to an underlying stimulus, inflammation.

The adenomatous polyps of chronic ulcerative colitis range from small, finger-like projections of granulation tissue, which contain only a few glands, to large, pedunculated and sessile polyps. Usually they are large and possess a more exuberant character than the pseudoadenomatous polyps, but exceptions to this are common. Adenomatous changes in the glands are evidenced by an increase in the size of the nuclei of the cells, abnormally deep staining of the nuclei, malalignment of the nuclei, numerous mitotic figures, diminution of the amount of cytoplasm and diminution of production of mucus. Adenomatous changes may be confined to a few isolated glands in a polyp which may otherwise be composed to a large extent of granulation tissue. The cytologic changes in these polyps constitute a definite type of dedifferentiation and anaplasia which represent an abnormal regenerative response.

It seems reasonable to assume that if the individual lived long enough, these polyps eventually would change into the dusky, red, hemorrhagic polyps, readily recognized as true carcinomatous polyps. Occasionally, too, carcinoma is discovered in small adenomatous polyps. The distinction between an advanced adenomatous change and a carcinoma of low grade of malignancy is at times barely perceptible. Carcinoma is evidenced by more advanced dedifferentiation, anaplasia and invasion of the submucosa. In other cases, malignancy of high grade has originated in the depths of the ulcerative process without apparently the intervening stage of formation of polyps. Long stretches of colon have been invaded and multiple cancerous foci are present. Such a condition affects young persons during the stage in which lesions of chronic ulcerative colitis are healing.

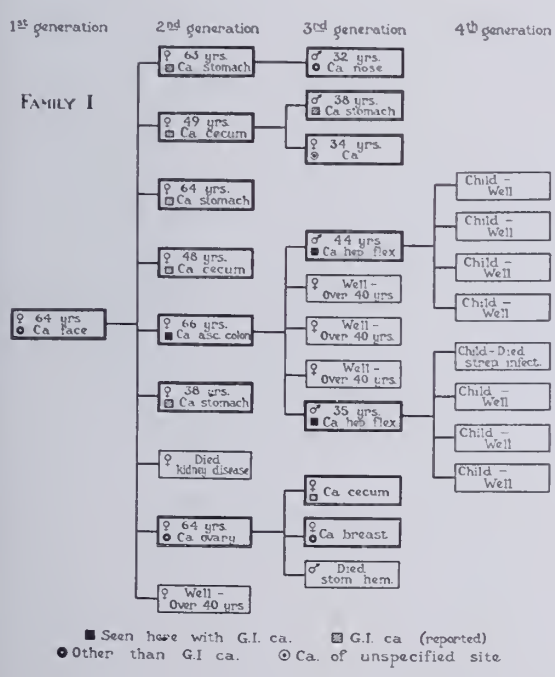
This whole picture forces the assumption that there is a tendency, in chronic ulcerative colitis, toward the growth of neoplasms; in some cases adenomas are produced and, in others, carcinomas of high grade of malignancy. A microscopic section of colon involved by healing lesions of chronic ulcerative colitis and by numerous carcinomas presents a startling sight. In addition to the unmistakable cells of carcinoma there are innumerable cells, in all stages of development; this observation suggests very rapid and uncontrolled multiplication and growth.

THE RELATION OF HEALING TO CARCINOMA

In the discussion of the development of carcinoma in association with chronic ulcerative colitis it has become apparent that inflammation and healing are closely allied. When an ordinary injury of the human body occurs, the forces of healing are called on at once and repair proceeds in an orderly fashion so that in due time the tissues are rebuilt to approximately the state in which they existed

prior to the injury except for the scar tissue which will have replaced some of the previous normal tissue. If a linear wound occurs, the scar resulting will be a thin linear scar. If a large destructive wound such as that of a gunshot occurs, the scar tissue in a general way will resemble the original wound. If a single abscess occurs, such as a carbuncle of the neck, a scar assuming the contours of the original abscess may ensue. If a segment of bowel is removed as for a carcinoma of the sigmoid and later the colonic stoma is closed by the crushing forceps method, several linear scars will result in the mucous membrane. All these are the result of a single injury, which although violent, is not repeated.

Fig. 1. Cases of Cancer in one family studied.



In the case of a disease such as ulcerative colitis, repeated violent attacks of colitis may occur. The force which controls repair of tissue and allows healing to proceed only to the point of replacing the original structures seems to have been lost. In such cases healing may proceed in an orderly fashion for a time, but will not stop when it has reached the point of greatest efficiency as far as bodily economy is concerned. With each attack of colitis, repair of tissue is attempted by nature, but apparently the factor which controls healing is called on so frequently and so persistently that the body cannot supply enough material for normal healing, and thus instead of normal cells many abnormal or poorly developed cells take part in the healing process. Sometimes this process proceeds to a point where the rapid replacement and growth of abnormal cells crowds out the normally growing cells. The healing process does not stop when the stage of normal restoration has occurred but continues in an abnormal phase. Marked overgrowth of abnormal and uncontrolled cells results. Thus, the diffuse neoplasia is produced which occurs in some cases of chronic ulcerative colitis of long standing. This process of reasoning is attested to by the fact that this type of change occurs among young persons. Among patients from the ages of fifteen to twenty-one years who have had chronic ulcerative colitis for seven, eight or ten years extensive and rapidly fatal carcinoma of the large intestine has developed. In these cases the age factor, the inflammatory factor and the factor of healing are probably all taking part in this abnormal development.

FAMILIAL TRENDS

The problems which have been mentioned, and in fact the whole problem, may be affected by the familial factor. The impression that cancer "ran in families" has existed for a long time. Impressions in this regard frequently are brought to our attention forcibly by one or more individuals and their families.

An attempt to test the validity of this impression has been made by Doctors Mayo, Giffin and myself by an analysis of the records of 438 individuals and their families. The investigation began with a study of 176 patients who had proved cancers of the large intestine in whose families the incidence of cancer was marked. The cases were studied

with reference to the presence of gastrointestinal cancers, and also with reference to cancer of the body as a whole. A very careful analysis of this group of individuals was made, and in an attempt to standardize our findings it was undertaken by comparison with two equally uncontrolled groups of patients.

The 176 patients were treated on the enterologic service of the Mayo Clinic for proved carcinoma of the large intestine. A control group consisting of 176 patients of the same ages, who presented themselves for study during approximately the same time, whose condition was diagnosed as hypertrophic arthritis but who did not have carcinoma were studied and their family histories analyzed. A third group consisting of eighty-six patients who had proved carcinoma of the kidney and their families were studied.

SUBDIVISION OF RELATIVES

The relatives of these three groups of patients were divided into two groups: (1) those who had cancer and (2) those for whom no available information of its presence was at hand. A further subdivision of the relatives who had cancer was made: (1) those who had cancer of the stomach or large intestine; (2) those who had cancer of specified site elsewhere, and (3) those who had cancer of unspecified site.

It was found that among the cancerous relatives of the 176 patients who had cancer of the intestines seen at the clinic, the incidence of cancer of the intestinal tract was more than twice as large as in the two control groups. It became apparent that when multiple cancers occur in a family and one cancer is localized in the colon or rectum, there is an appreciably greater chance that cancers of other members of the family will be localized in the rectum, colon or stomach, than in cancerous families in which colonic and rectal cancers were not known to exist. Furthermore, the incidence of cancer in the families of the 176 patients who had cancer of the intestines was much larger than in the families of the patients who had hypertrophic arthritis.

The 176 patients who had cancer of the intestines had 1,108 relatives; 290 of these had cancer, an incidence of 26 per cent. The 176 patients who had hypertrophic arthritis had 1,033 relatives, of whom fifty-seven had cancer, an incidence of six per cent. The eighty-six individuals who had cancer of the kidney had 471 relatives, of whom 104 had cancer, an incidence of 22 per cent.

Cancer of unspecified site occurred in these three groups in 22, 25 and 23 per cent, respectively, of the whole. Of the 290 individuals who had cancer in the first group, cancer of the gastrointestinal tract occurred in 42 per cent of the cases. Of the fifty-seven individuals who had cancer and were relatives of the patients who had arthritis, cancer of the gastrointestinal tract occurred in 25 per cent, and at other specified sites than the gastrointestinal tract, in 50 per cent of the cases.

The family trees of one of the 176 families considered is illustrated in Figure I. Obviously, too many factors are concerned in human family relationships to make it possible to arrive at any conclusion with regard to the transmission of cancer from generation to generation. However, the probability of this was strongly suggested by this study, and furthermore it is likely that an individual who has a cancer of the intestines may have offspring who may have cancer of the intestines.

BEARING OF NEWER CONCEPTS ON TREATMENT

It is neither my purpose nor my province to consider the details of surgical procedures or the surgical technique for malignant disease of the large intestine. The importance of the facts mentioned in relation to the treatment of malignant disease, however, cannot be overemphasized. I shall point out a few of these relationships. The study of the tissue changes in the development of intestinal carcinoma brings out the importance of studying the patient as a whole. A patient

who has carcinoma of the intestine should be examined with the greatest care and in utmost detail. Very small local lesions may already have had occasion, by an embolic accident, of distributing cancer cells and thus metastatic lesions may be found in the liver when the local lesion is entirely operable and even small. The clinician and surgeon should never be satisfied with finding and removing one carcinoma of the intestine. The entire large intestine should be carefully examined. If this is not possible before operation because of obstructive features, hemorrhage or other systemic difficulties it should be done at the time of operation and afterward.

IMPORTANCE OF RESECTION

The importance of extensive resection is emphasized by the finding of these polypoid projections in the mucosa adjacent to even the smallest carcinoma or in that segment of bowel subject to the malignant state. It behooves the pathologist then to examine the apparently minor polypoid projections of the resected segment of bowel. The finding of these polypoid projections and submucous lymphoid follicles also brings up the question of prophylactic treatment. Although results of roentgen therapy of adenocarcinoma of the intestines in general have not been satisfactory, perhaps prophylactic treatment of these conditions should be considered. All polyps of the intestine whether found at sigmoidoscopic examination or through roentgenologic investigation should be removed. Fulguration of polyps within the sigmoidoscopic field is a relatively simple matter. Removal of polyps above this site must be done by transcolonic excision and so becomes a major operation. After the removal of polyps and carcinomas of the intestines, frequent check-ups are necessary, and it has been our custom to have the patient return at least every six months for several years and then every year for at least five years.

It is not always possible to delve into the family history of an individual patient but whenever this can be done, he or some member of the family should be questioned carefully about cancer in other members.

Ultimate cure will depend in some measure at least on the nature of the lesions and so grading and classification of the lesions assumes considerable importance. Longevity is considerably greater in lesions of the grade one (Broders' classification) than of the grade four. The same can be said with regard to the lesions classified according to Cuthbert Dukes' method, that is according to infiltration of the intestinal wall. The small lesion with extensive infiltration of the wall offers a much more serious prognosis than a large lesion without infiltration and which has grown into the lumen of the bowel.

MORTALITY AND PROGNOSIS

In the past there has been a good deal of fear among surgeons with regard to mortality and immediate prognosis. Much has been accomplished in this phase of the management of intestinal lesions. Preoperative preparation consists of numerous details, the completion of which takes three or four days, or often more. The diet which these patients receive should contain a minimum of residue; hence a diet rich in carbohydrates is indicated. Intestinal irrigations with warm physiologic solutions of sodium chloride are of importance. These are given twice a day during the immediate preoperative days. Blood transfusions and other measures of rehabilitation cannot be overemphasized. The administration of the intraperitoneal vaccine preoperatively has done much to reduce the incidence of that serious menace. This vaccine has been administered preoperatively to several thousand patients who have had colonic resections. A carefully controlled statistical analysis of 3,000 cases in which vaccine has been employed has just been completed. Vaccine was given to every other patient who entered the hospital on the colon service without any selection whatsoever. The incidence of peritonitis in the vaccinated group has been reduced approximately 30 per cent. This is true when analyzed from the standpoint of patients, operations and

according to surgeons who have operated. Finally, the administration of the various sulfonamide drugs including particularly sulfanilamide and sulfaguanidine in the control of wound infection and in the care of the perforated growths has been of help.

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THE CHOICE OF ANESTHETICS*

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THE universal anesthetic or technique has not been found. No single agent or method of administration is the best for all types of operations. The choice of anesthetic and technique should be governed by:

(1) The condition of the patient.

(2) Physical and laboratory findings.

(3) The type of operation proposed.

(4) The peculiarities of the surgeon.

When I mention peculiarities of the surgeon I have in mind the following:

(1) His "pet" anesthetic.

(2) The amount of relaxation he demands.

(3) The approximate time he will consume for the proposed operation, and

(4) Whether he uses novocaine with the operation.

Thus, we readily see that a capable anesthetist must be able to interpret physical findings and understand the pharmacological action of the various anesthetic agents. He must know the physiology of the respiratory and circulatory systems, have technical skill and be a psychologist.

The various types of anesthetics in use at the present time are shown in the following table:

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I. General anesthesia	
1) Indirect	A. Liquid
a) Oral	1) Ether
b) Pharyngeal	2) Chloroform
c) Intratracheal	3) Vinethene
1) Inhalation	4) Ethyl chloride
2) Insufflation	B. Gas
	1) Nitrous oxide
	2) Ethylene
	3) Cyclopropane
d) Rectal	Ether, Barbiturates, Avertin
2) Direct	
a) Intravenous	Barbiturates
II. Local or block anesthesia	Novocaine
III. Spinal anesthesia	Cocaine

Unquestionably ether is the most reliable anesthetic agent for relaxation. When other agents fail to relax, ether is drafted into service. Since its early introduction in anesthesia, ether has never failed in being utilized

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for overcoming the shortcomings of other methods. Ether still occupies the position of the most extensively used agent in spite of its great handicaps. However, the contraindications for the use of ether are many and should be observed. These are flammability, idiosyncrasy, respiratory disturbances, renal diseases, atheromatous vessels, and elderly patients.

Ether may be administered in many ways such as open drop method, semi-open, closed method (using either the gas machine or special equipment), vapor inhalations, intrapharyngeal inhalation, intratracheal inhalation, and rectal administration.

CHLOROFORM

Chloroform is certainly an excellent anesthetic for relaxation, especially in obstetrics when version and extraction is being contemplated. Probably no other volatile anesthetic agent is capable of producing the relaxation that can be obtained with chloroform. However, this agent possesses many contraindications that should be observed. These are: weak, anemic patients, status lymphaticus in children, prolonged operations, diabetes, diseases of the heart, liver and kidneys.

Drop method is the only technique recommended with this agent.

Vinyl ether is the reaction product of B,B' dichlorodiethyl ether and caustic alkali in the presence of ammonia.

Vinethene, an inhalation anesthetic for short anesthesias, is of greatest value when rapid, easy induction and prompt recovery with a minimum of postanesthetic effects are desired. Administered by the open drop method, it is especially useful to produce light anesthesia when unconsciousness and freedom from pain are more important considerations than muscular relaxation. Vinethene may also be used with oxygen to supplement the gases, especially nitrous oxide and ethylene. Being a liquid, vinethene is easily portable and may be carried conveniently in the physician's bag.

Salivation may occur when anesthesia is carried into the surgical stage in unpremedicated patients. Vinethene is extremely volatile and close attention is required for smooth administration. Changes in depth of anesthesia occur rapidly, and skill is necessary to maintain an even level of anesthesia. The signs of vinethene anesthesia differ from those of ethyl ether anesthesia, and experience in the use of vinethene is required in order to obtain optimal results.

When vinethene is employed it should not be administered too rapidly. A high concentration of vinethene vapor, though not irritating enough to produce spasm of the larynx, may still produce excessive secretions, or an undesirably rapid deepening of the anesthesia. This anesthetic agent should not be pushed.

If overdosage with vinethene occurs, it is likely to inhibit respiration with development of anoxemia and cyanosis. Under these circumstances administration of the anesthetic should be stopped, and after a patent airway has been quickly established, immediately institute artificial respiration and administer oxygen.

The explosive and fire hazards of vinethene are just about equal to those of the other inflammable agents, ethyl ether, ethylene, cyclopropane, ethyl chloride and acetylene.

TECHNIQUE FOR THE ADMINISTRATION OF VINETHENE

Due to its high volatility, vinethene must be added continuously to the mask during induction and maintenance, when using the open drop method, in order to maintain an even concentration of the anesthetic vapor and thus promote a smooth anesthesia. This is in direct contrast with ethyl ether, in which a short interruption of administration is of much less consequence. For the same reason, the tip of the dropper must be kept only one inch from the mask in order to decrease the loss of vinethene by evaporation in air before the drops reach the gauze. All of the vinethene should be vaporized on the mask and

none allowed to touch the patient's face. As in all anesthesia, an unobstructed airway is of paramount importance.

Any mask suitable for open drop anesthesia may be used, covered either with stockinet or with eight to ten layers of coarse gauze. Gauze alone may be used in lieu of a mask. There is greater danger of skin burn when a mask is not employed. It may be desirable to drape a wet towel around the mask so as to make it semi-closed; however, it is essential to permit unobstructed breathing.

The vinethene should completely vaporize on the mask. When gauze alone is used it is advisable to protect the face with cold cream. The use of gauze alone without a mask may result in skin burn from contact with gauze wet with vinethene if cold cream is not used to protect the face. The tip of the metal cap should not be removed. Slight adjustment will control the rate of flow.

ADMINISTRATION

Induction with vinethene is rapid and should be kept uneventful. Usually the patient loses consciousness within one minute. For a few seconds, allow the mask to fit loosely and administer vinethene slowly. Then gradually increase to a rate from 40 to 60 drops per minute. However, changes in depth of anesthesia occur rapidly and skill is necessary to maintain an even level of anesthesia. The signs of vinethene anesthesia differ from those of ethyl ether anesthesia, and experience in the use of the former is required in order to obtain optimal results.

When administered carefully, the patient will pass through the first and second stage rapidly and usually without excitement.

In the third stage, respiration becomes regular, quiet, and increases in volume. In the first plane, the eyelids may remain open and the eyeball active; the pupillary reflex is variable. In third plane anesthesia the lids relax, the eyeball is fixed, and the pupil may dilate as in deep ethyl ether anesthesia. Full recovery from deep vinethene anesthesia usually occurs in a few minutes.

When intercostal activity has been abolished, the patient is in the fourth plane of surgical anesthesia. This plane of anesthesia should be avoided. Should respiratory arrest occur, remove the mask and anesthetic agent, be sure of a patent airway, immediately institute artificial respiration and administer oxygen. The response and recovery are usually quite prompt.

THE CLOSED METHOD

When using vinethene in a machine, it should be vaporized with oxygen. It may be administered simultaneously with nitrous oxide or ethylene in order to obtain greater muscular relaxation. When using vinethene with ethylene or nitrous oxide, at all times allow the patient a supply of oxygen sufficient for good color.

The advantages of vinethene over ethyl chloride are as follows:

(1) Requires greater vinethene dose than ethyl chloride to produce respiratory arrest.

(2) If respiratory arrest occurs with vinethene, cardiac arrest will follow in two and one-half to three minutes. With ethyl chloride, cardiac arrest follows respiratory arrest immediately. This is an important point.

(3) Nausea and vomiting is less likely to occur during recovery from vinethene.

(4) Vinethene has no effect upon the heart.

(5) Vinethene may be administered over much longer period than ethyl chloride without danger of respiratory or cardiac complications.

CONTRAINDICATIONS

Vinethene has its contraindications like other drugs. It should not be used in the presence of cautery or flame. Because of the danger of respiratory arrest vinethene should not be pushed or used in high concentration. It is contraindicated in diseases of the liver, cardiovascular system, renal insufficiency and old patients. It is important that, when using vinethene, an open and free airway should be maintained at all times. Cyanosis should never be tolerated when using this agent.

ETHYL CHLORIDE

Ethyl chloride is a fair agent for very short surgical procedures, requiring not longer than five minutes. This agent is an excellent one to use for induction in ether anesthesia. Ethyl chloride is very potent and must be administered with great caution. The contraindications for the use of ethyl chloride are the same as those for chloroform. Ethyl chloride should not be used where muscular relaxation is necessary.

Under the gas anesthetic agents we include nitrous oxide, ethylene and cyclopropane.

Nitrous oxide is the most popular of the gas anesthetic agents. It is a valuable agent because it is non-inflammable when used with oxygen alone. However, we must bear in mind that nitrous oxide as well as oxygen is non-inflammable but will support combustion. Nitrous oxide is easy and pleasant to breathe. It is not irritating to the respiratory tract.

The contraindications for use of nitrous oxide are outstanding. It should not be used where relaxation is necessary. It is contraindicated in advanced tuberculosis, valvular heart disease, and any condition where there is obstruction to the air passage. Patients that are muscular, athletic, alcoholic, and with high metabolic activities take very poor nitrous oxide anesthesia.

ETHYLENE

Ethylene is more valuable than nitrous oxide and gives better relaxation. However, the relaxation is not as good as with certain other agents. Oxygen can be doubled with this agent. Ethylene is contraindicated when flame or cautery are to be used.

Cyclopropane is an excellent gas for many surgical procedures. A suitable agent for chest surgery because of high oxygen concentration and the potency of the agent. This agent, when helium is not added to the mixture, is highly explosive. It is contraindicated in cardiac diseases such as myocarditis and fibrillation.

Epinephrine hydrochloride and certain other sympathomimetic amines should not be used during cyclopropane anesthesia because there may develop severe cardiac irregularities which may lead to ventricular fibrillation. It has been shown that cyclopropane increases the irritability of the autonomic tissues of the heart more than chloroform or ether.

INTUBATION ANESTHESIA

Intubation anesthesia has a wide range of usefulness and a definite place in surgery and anesthesia. This is a valuable adjunct to anesthesia. Many anesthetists hesitate to adopt intubation anesthesia because of the laryngoscopy technique involved. However, once intubation has been performed, the margin of safety to the patient is greatly increased. This type of anesthesia provides an immediate and effective means of artificial respiration. It also provides insured airway for the patient at all times regardless of his position on the table. Intubation anesthesia should only be attempted by one who has been trained in its technique.

Rectal ether has its place in surgery, especially in obstetrics. It is undesirable to use this form of anesthesia because:

(1) The method is unreliable.

(2) Distention of the rectum is prone to occur.

(3) Ulceration of the colon may result in complications.

Barbiturates and avertin by rectum are useful only as basal anesthetics. They are useful to avert the psychic shock that patients may experience when being transported from their bed to the operating table. When these agents are used rectally, it is wrong to assume that a large enough dose should be administered to produce general anesthesia. Massive dosage of these drugs administered at one time frequently prove fatal.

(1) Patients in shock.

(2) Debilitated patients from chronic infection.

(3) Severe diseases of lower colon, liver and kidneys.

DIRECT METHOD OF ANESTHESIA

The direct method of anesthesia refers to the intravenous administration of the barbiturates.

Each time a new anesthetic agent is introduced, it appears that the best one has been discovered. However, many of the agents developed in the past have been discarded because of bad results even in the hands of experienced anesthetists. It appears that pentothal sodium is so definitely superior to drugs previously used that intravenous narcosis has been definitely established on a firm and, I hope, conservative basis.

The preliminary medication is very essential for all types of anesthetics, especially with the intravenous barbiturates. Opiates and atropine sulphate are of definite value in obtaining satisfactory relaxation and preventing the formation of mucus in the air passages.

TECHNIQUE OF ADMINISTRATION

The dose cannot be accurately judged by the patient's weight, age, sex, metabolic state, and so forth, but must be adjusted for each individual patient. In order to obtain the proper depth of narcosis for the particular type of operation, one must resort to the intermittent technique in the administration of this agent. The technique used in the institutions under my supervision is very simple and requires inexpensive apparatus.

The operating field is prepared and draped. Venipuncture is performed after the skin has been surgically prepared. Three cc. of four per cent solution is injected through a period of about ten seconds. The injection is then stopped in order to permit the complete effect to appear, which requires approximately ten seconds. Because relaxation comes on more slowly than unconsciousness, it is very important that a pause follow the injection of each two or three cc. of the drug. If relaxation is not sufficiently advanced to permit operation, an additional two or three cc. can be injected at the same rate as in the beginning. The air passage must be patent. If the respirations are extremely depressed, oxygen or a mixture of oxygen-carbon dioxide may be administered by means of nasal adaptors or catheters.

It must be remembered that since the agent is given intermittently, the effect following the administration of each successive dose is increased. The pause between injections is highly important because the accumulated effect may come on very suddenly. Evidence of recovery is an indication that an additional one to two cc. of the solution is necessary. This intermittent administration technique has made it possible for us to use pentothal over a period varying from three minutes to four hours in practically all types of surgical procedures. The ages vary from five years to 89 years.

This form of anesthesia should not be employed when there is any mechanical interference with the respiratory function. This agent is contraindicated in conditions of severe myocarditis and in diseases of the liver and kidneys.

LOCAL AND BLOCK ANESTHESIA

Local and block anesthesias are useful and have a definite place in surgery. The contraindication can be briefly stated as follows: patient's idiosyncrasy to epinephrine, novocaine, cocaine, or their derivatives.

Spinal anesthesia is a valuable adjunct to surgery. It is being used with considerable satisfaction in operations involving the chest and regions below the diaphragm. The contraindications may be briefly summarized as to:

(1) Extensive cardiovascular diseases.
(2) Brain tumor.
(3) Syphilis.
(4) Shock.

CONCLUSIONS

I have attempted to give a brief review, with special attention to contraindications, of the various anesthetic agents and technique available at this time. However, I wish to suggest, if I may, that anyone desiring to administer an anesthetic should thoroughly

familiarize himself with the scientific literature dealing with the experimental and the clinical use of the agent before attempting to employ it on his own initiative. Also, from time to time, in order to keep abreast with this work, he should attend various clinics and when necessary take short postgraduate courses which are available in the various cities in the United States. No longer should the leaders in medicine and surgery be satisfied with a form of anesthesia that simply renders the patient insensible to pain during the operation. They should insist further, and rightly, upon maintaining the patient's vitality, reducing the effect of shock as much as possible, so that the patient may be as comfortable as feasible during recovery and convalescence. The patient of our time should be assured of complete oblivion from pain during surgery, with a minimum of discomfort and risk.

DISCUSSION

Dr. Eldon B. Tucker, Morgantown: Dr. Thomas has given us a very interesting and a very instructive paper on "The Choice of Anesthetics." He has not, however, spent much time on the choice of the anesthetist. But it is a foregone conclusion that there can be no proper selection of the anesthetic agent unless the selection is made by the trained physician anesthetist.

Dr. Thomas has taken up the various anesthetic agents which are in general use and has given us the indications and contraindications for their use. The third anesthetic agent which he has discussed is vinethene or vinyl ether. I believe that he has given entirely too much time and space to the discussion of this agent. I wonder if he has not done this because vinethene is one of the newer anesthetic agents which can be administered by the open drop ether technique and does not require an expensive apparatus for its administration, and which he does not consider as dangerous as ethyl chloride for short anesthetics. Personally, I rarely use vinethene except for the reinforcement of nitrous oxide for tooth extractions in an obstreperous patient.

I would like to ask Dr. Thomas a number of questions concerning the selection of the anesthetic in emergency operations. I would say that any patient who is rushed into the hospital and is operated upon or delivered within one to two hours, is an emergency.

1. What anesthetic agent do you employ for emergency cesarean section?

2. What anesthetic agent do you employ for delivery of patient who has a full stomach?

3. Do you use any gaseous anesthetic agents in the presence of a cautery or when the fluoroscope is being used?

4. Will you name the emergency surgical procedures in which you consider spinal anesthesia indicated?

5. What emergency precautions should be available to counteract an overdose of pentothal,

6. Are anesthetic accidents more frequent in emergency operations? If so, why?

7. What is the safest anesthetic for short emergency operations in the office or improperly prepared patients?

Dr. Thomas has given us a very practical paper. If we follow his suggestions, I am sure we will make fewer mistakes in the selection of the proper anesthetic. It has been a pleasure indeed to have Dr. Thomas with us for this meeting.

Speech Defects of Children

The causes for sound substitutions or omissions in words in the speech of young children may be both functional and organic, Ruth E. Beckey, Ph.D., Columbus, Ohio, says in a recent issue of *Hygeia, The Health Magazine*. Fortunately, she adds, many of the substitutions are due to faulty training, too much isolation, overstimulation, defective models for imitation and too much criticism by the parents. However, many of the organic defects of the speech apparatus may be repaired if the child is taken to the surgeon or orthodontist early enough. The teeth may need to be straightened before the child can say some of the sounds. If the front teeth have not yet appeared, and the "s" is defective, the best plan is to wait for the teeth to appear. The "s" may take care of itself. If hearing is suspected to be defective, an audiometer check should be made to determine whether the child is hearing all of the different speech sounds accurately. The parents should also try to remove any unfavorable factors in the child's environment which may be impeding his progress, Dr. Beckey warns.

TESTING HEARING AND EVALUATION OF RESULTS IN MATHEMATICAL FIGURES*

By C. E. KINNEY, M. D., F. A. C. S.
Cleveland, Ohio

Any attempt to evaluate hearing loss in percentage is fraught with innumerable obstacles; nevertheless the need for such a method is quite urgent. One session in a courtroom witness chair trying to explain to the judge, several lawyers, and a jury the actual facts about a decibel is evidence enough. The writer realizes, and has written about the importance of a careful history, complete nose, ear, and throat examination, and tuning fork tests in the diagnosis of a hearing problem. After that is done, we still desire to know the amount of hearing loss in terms that have some universal understanding.

The pure tone audiometer was developed in an attempt to fulfill the above mentioned need. A short consideration of the different factors going into the development of the audiometer and its subsequent slight changes will be helpful in understanding the results of the work to be reported. In order to facilitate this understanding I will attempt to define a decibel.

In the development of the radio it was found that the radio tube could be made to emit, through a wire and dynamic receiver, pure tones of different pitches. It was also found that the intensity of these pure tones could be varied at will. Since most of the early tuning fork work had been done using the C scale, it was natural that this should be the scale of choice in the development of an audiometer; hence we have most of the audiometers today set up on this scale, namely, 128, 256, 512, 1024, etc. It then became necessary to determine what was minimal audible hearing for each one of these pure tones. After much experimenting it was soon discovered that this normal minimal audible hearing varied with age. It was decided in cooperation with the Bureau of Standards to take the age of approximately 20 as the normal figure. This has been changed slightly since the original standardization but for all intents it has remained the same.

Since we always like to see medical facts and figures recorded on a graph-like chart, the chart was the next development in an attempt to record audiometric findings. But in order to make a workable chart it was necessary to determine the maximal audible hearing for each of these pure tones; in other words, at what point does this impulse change from one of hearing to one of feeling or, more properly, pain? This limit is still under considerable debate and is far from settled. However, one fact is agreed upon, namely, in the lower and upper range of hearing the difference in intensity between minimal audible hearing and pain is less than it is at the center of the range. Thus we have the curve on the bottom of most audiometric charts marked, in many instances, total loss of serviceable hearing. Again, since we like to think in terms of 10's and 100's it was decided to divide this chart into 100 units.

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In experimenting with the human ear it was discovered that the smallest perceptible change in intensity of any given tone increased the further we got away from the minimal audible tone. It was also discovered that this variance was on a logarithmic scale, hence we have the birth of the bel and its grandchild the decibel. A decibel is one-tenth of a bel, and a bel represents the mathematical power of 10 that is the equivalent of the intensity ratio over that of the minimal audible tone in the average human ear. One ten millionth of a milliwatt of increased sound power, an infinitesimal amount, is enough to give a sensation of increased loudness to the ear near its threshold of hearing. But at the upper limit of hearing it requires ninety billion milliwatts of increased power loudness to produce the same sensation. To illustrate I have prepared a standard type of audiometric chart with the intensity ratios written on the corresponding decibel lines. You can see that the 30 decibel line has 1000 written upon it. Thirty decibels is three bels and is therefore 10 raised to the third power, or 1000. This means that the tone being produced at this point has 1000 times the intensity of the tone at the 0 line which represents the minimal tone that can be heard by the average human ear. Therefore, one can see that a decibel is not a constant intensity change but one on a logarithmic scale, and this must always be kept in mind.

PERCENTAGE LOSS FOR SPEECH

An early attempt to convert a decibel hearing loss into a percentage loss for speech was made on the basis that the average speech range was from 512 to 2048; thus it was suggested that the average decibel loss at 512, 1024, and 2048 should be multiplied by the factor 0.8 to obtain a percentage figure. In other words, at 1024 there were 120 decibels between the minimal and maximal hearing and if a patient had a 30 decibel loss at this point it was only 24 per cent of the total loss that he could theoretically obtain. It is now pretty well agreed that the average male voice is around 128 frequency and the average female voice is around 256 frequency, therefore, this method of determining speech loss in percentage figures is rapidly being discarded.

DETERMINATION OF HEARING LOSS

It was with this background that I began to ponder over our mathematical determination of hearing loss. There were two problems which puzzled me very much. I would examine the hearing of school children by the old spoken voice test and then refer them to our ear clinic for pure tone audiometric studies. There was considerable variation in the two findings which was very hard to explain. Also, there was the problem of inflating eustachian tubes for chronic catarrhal deafness and healing cases of otitis media. The patient seemed to be much happier after the treatment and I could also demonstrate that the hearing was increased by spoken voice test. However, I was unable to demonstrate any increase in hearing on the pure tone audiometer. The Western Electric Company then came out with the 6A audiometer which had a microphone circuit connected to the intensity rheostat and shortly thereafterwards the Maico Company came out with their D5 audiometer which had a similar microphone circuit connected with the intensity rheostat. Both of these were put in place ostensibly in order that one might converse with the person being tested. I began using this part of the instrument in testing for whispered voice loss. I attempted to use a phonograph record in order to make certain that the source of the sound in whispered voice testing was constant but there were difficulties in arriving at a point of loss by this method. Previously I had noticed that in pure tone testing there was a phenomenon similar to the after image of the eye, namely, the person always seemed to hear the sound at a lower level of intensity when the intensity was being reduced than he heard this same tone when one started below that person's threshold and increased the in-

tensity. The same phenomenon was noticed in whispered voice testing. We have adopted the principle of taking our reading at a mean between these two points. The phonograph method has been discarded.

In arriving at a minimal normal threshold for whispered voice testing something over 200 normal ears were examined, and my own voice and that of one of my assistants were used. The side of the face was put in contact with the edge of the microphone in using either the Maico D5 or the Western Electric 6A audiometer. Two digit numbers and two syllable words from a consonant and vowel list of words were used. A Barany noise apparatus was used in the ear not being tested. A normal minimal threshold was established on the Maico D5 audiometer at the 0 loss on the bone conduction scale. On the Western Electric 6A audiometer this normal minimal threshold was found to be at 0 decibel loss with the frequency dial placed at 128 and making the intensity reading at 128. All of these tests were conducted in a room which had been acoustically treated and the noise level, by several tests, averaged slightly under 20 decibels.

AVERAGE USABLE RANGE

Believing that the usable hearing of the human ear in everyday life, including some music, has an average range between 100 and 5000 cycles, I have chosen to average the decibel loss at 128, 256, 512, 1024, 2048, and 4096 as the decibel loss to pure tones and those are the averages in my pure tone findings in the following reports. The decibel loss for whispered voice was recorded as above described. There may be many criticisms of this method of testing and recording findings; to date, however, a more accurate and more practical method has not been described. In the following reported cases the testing was done under identical conditions and the recordings were made according to the described method. In order to eliminate the question of hearing from the non-tested ear only bilateral cases are reported. The disparity in hearing loss between the two ears is less than 30 decibels. None of these cases were selected except as they fulfilled the stipulated requirement.

TABLE I—174 CASES—BILATERAL OTITIS MEDIA

Age Incidence—170 Under 20 Years, Four Over 20 Years.

Average Hearing Loss	Right	Left
Pure tone	29.8 db.	29.8 db.
Whispered voice	22.9 db.	23.4 db.
	6.9 db.	6.4 db.

In Table I there were 174 cases of bilateral hearing loss of the typical otitis media class. There was a history of bilateral discharging ears and both drums showed evidence of this infection. This was in the form of active discharge or large perforations, healed or patent, or thick scarred tympanic membrane. Everyone of these cases had normal bone conduction hearing in both ears. You will see that the average decibel loss by pure tone testing in the six frequencies was 29.8 for the right ear and 29.8 for the left ear, and the average loss by whispered voice test was 22.9 decibels in the right ear and 23.4 decibels in the left ear, showing that the loss with this disease was approximately 6.5 decibels greater for pure tones than it was for the whispered voice test. There was not much variation in the entire series of cases. Before actually averaging the figures my general impression was that the loss to the pure tones and whispered voice was approximately the same.

TABLE II—40 CASES—NORMAL EAR DRUM, NORMAL BONE CONDUCTION

Age Incidence—13 Under 20 Years, Three From 20 to 30 Years, 17 From 30 to 40 Years, Five From 40 to 50 Years, and Two From 50 to 60 Years.

Average Hearing Loss	Right	Left
Pure tone	40.1 db.	37.6 db.
Whispered voice	26.0 db.	23.4 db.
	14.1 db.	14.2 db.

In Table II, I have listed 40 cases in which there was no history of otitis media, the drum seemed perfectly normal and the bone conduction hearing was perfectly normal; in other words, cases of the so-called otosclerotic type. The average loss of the six mentioned frequencies for pure tone testing in the right ear was 40.1 decibels and the left ear 37.6 decibels. The loss by whispered

voice testing for the right ear was 26.0 decibels and for the left ear 23.4 decibels. In this disease there was approximately 14.1 decibels greater loss for pure tones than for whispered voice. This difference was fairly constant throughout the several age groups.

TABLE III—31 CASES—NORMAL EAR DRUM LOW BONE CONDUCTION

Age Incidence—All Under 20 Years.

Average Hearing Loss	Right	Left
Whispered voice	53.0 db.	56.9 db.
Pure tone	45.3 db.	48.3 db.
	7.7 db.	8.o db.

In Table III there are 31 cases in which there is a history of hereditary deafness or severe systemic infection at some time. The drums were perfectly normal but they had a markedly diminished bone conduction response in both ears. These cases were all under 20 years of age and you can see that the average decibel loss to pure tones was in the right ear 45.3 and the left ear 48.3. The decibel loss to whispered voice testing was 53.0 in the right ear and 56.9 in the left ear. There is approximately 8.0 decibels less loss to the pure tones than to the whispered voice.

TABLE IV—31 CASES—NORMAL EAR DRUM, LOW BONE CONDUCTION

Age Incidence—Two From 20 to 30 Years, Five From 30 to 40 Years, Eight From 40 to 50 Years, Three From 50 to 60 Years, Nine From 60 to 70 Years, Four From 70 to 80 Years.

Average Hearing Loss	Right	Left
Pure tone	49.9 db.	46.3 db.
Whispered voice	37.6 db.	32.8 db.
	12.3 db.	13.5 db.

In Table IV there are 31 cases following the same criteria as in Table III but these cases are over 20 years of age, the age incidence being shown on the chart. You will see that the average pure tone decibel loss is 49.9 in the right ear and 46.3 in the left ear and that the whispered voice loss in the right ear was 37.6 and in the left ear 32.8. This shows approximately a 12.5 decibels greater loss to pure tones than to whispered voice.

From the above mentioned cases I draw the following conclusions:

1. That in typical otitis media the whispered voice loss is slightly less than the average decibel loss for the frequencies from 128 to 4096 inclusive.

2. That the whispered voice loss in cases of the so-called otosclerotic type is definitely much less than the average pure tone loss.

3. That in cases showing a normal ear drum but with markedly decreased bone conduction response the whispered voice loss for younger people is greater than the pure tone loss, while in older people, with a similar type of loss, the whispered voice loss is much less than the pure tone loss.

AUDIOMETRIC TEST NOT ACCURATE

4. That there is a definite variation in the amount of hearing loss to pure tones and whispered voice depending upon the type or location of the lesion producing this loss.

From the above mentioned conclusions it would seem quite obvious that any attempt to give an estimate of the hearing loss in either one or both ears on a pure tone audiometric test alone is not accurate. It was with this firm belief that I have devised a method of estimating a person's hearing loss in percentage figures taking into consideration the pure tone loss for the frequencies from 128 to 4096 inclusive and the whispered voice loss in decibels. Since the normal upper threshold of hearing has not been definitely established it becomes very difficult to figure what total loss of serviceable hearing really is.

At the Alexander Graham Bell School in Cleveland there are 22 students who have no palpebral reflex when a loud clap of the hands is made near their ear. These students are all 14 years of age, or over, and have obtained an excellent education by the means of lip reading. These students all seem to have a response to the pure tone audiometer between 85 and 90 decibels in the frequency range of 256 to 4096. As far as they are concerned they have 100 per cent loss of hearing.

Therefore, I have put my 100 per cent loss of hearing to pure tones for the six mentioned frequencies at 80 decibels.

We also have 20 odd pupils who do not hear the whispered voice at 70 decibel loss on the audiometer but who have the ability to repeat loudly shouted numbers close to

their ear. Therefore, I have estimated that 100 decibel loss to whispered voice is total loss thereby making it equivalent to a percentage figure. In computing the percentage loss of hearing in a given ear I take the average decibel loss for the six frequencies from 128 to 4096 inclusive, multiply this average by the factor 1.2 and then average this figure with the decibel loss to the whispered voice test through the audiometer. As an example I will give you my most recent case of rather typical otosclerosis: This patient, in the right ear, had an average decibel loss in the six frequencies of 42 decibels. The whispered voice loss was 25 decibels. I multiply the 42 decibel average pure tone loss by 1.2 and get the figure of 50.4. I then average 50.4 with 25.0 and obtain a percentage loss of 37.7 in this ear.

I would like to close with the following thought: While the perception of individual pure tones throughout the range of normal hearing probably occurs in the cochlea their fundamental analysis occurs further in than the cochlea and any estimate of hearing loss must take into consideration the ability of perception and also the ability of analysis. *10515 Carnegie Avenue.*

DISCUSSION

Dr. V. E. Holcombe, Charleston: It has been shown that one child in seventeen, or six per cent of all children in the United States, has some impairment in hearing. Properly conducted auditory tests would probably reveal that one in ten of our population has some loss of hearing. With these facts in mind, all efforts to arrive at definite classification of these hard of hearing cases as to their peculiar losses and potential usefulness, even though handicapped, should be encouraged.

For this reason, Dr. Kinney's effort to utilize new and original methods to estimate more accurately hearing losses is to be commended.

Hearing tests are made for the following reasons:

1. To provide a basis for differential diagnosis.
2. To determine the need of hearing aids.
3. To determine whether school or preschool children have a hearing defect necessitating some special type of vocational training.
4. To determine fitness for military duty.
5. To determine fitness for occupation.
6. To gauge the efficiency of a particular type of treatment.

When the object of the test is to gauge hearing power, a simple instrument will suffice. An accurate unitonal instrument would be sufficient. When we consider the more complex needs of this great group of hard of hearing as to determining their occupational efficiency in this complex and changing age all the ingenuity and acument of the otologist must be exercised.

With the advent of the audiometer, no doubt an important milestone was reached in the progress of otology. However, after several years of usage and opportunity for appraisal, we are forced to conclude that the standard audiometer chart leaves much to be desired in a complete analysis of hearing defects.

In the first place, many observers have experienced dissatisfaction with the bone conduction findings of the upper tone range. Shambaugh states that with a bone conduction receiver the higher frequencies of the audiometer are heard increasingly by air, and that the bone conduction curve for the upper half of the tone range is unreliable. Hill states that accurate determination of the upper limit of hearing, especially by bone conduction, gives the most reliable information regarding the status of the internal ear, and may be of prognostic importance in regard to hearing. He suggests the monochord as the best available device for measuring both air and bone conduction in the upper tone range, granting, of course, the handicap that it is a qualitative instrument only.

As Dr. Kinney has stated, we all have experienced the finding that after inflation of diseased tubes, the patient experiences a decided improvement in hearing, but we are unable to demonstrate this improvement on the audiometer.

Very little attention has been paid to the investigation of tones above the threshold of hearing; that is, within the hearing range. After all, the patient is more vitally interested in what he can hear than in what he cannot hear.

A language is made up of vowel and consonant sounds. Vowels are more easily heard than consonants, but consonant hearing is much more important for the correct understanding of a word. One cannot infer accurately the efficiency of speech hearing from an audiogram.

These inadequacies are mentioned to remind us of the fact that the audiometer is vulnerable and is not the ultimate in perfection that we would like it to be.

With this in mind, additional means should be sought to ascertain what we can concerning impairment of hearing function. This is particularly true in an industrial community like West Virginia and hearing losses should be put on an exact basis comparable to visual field losses so that an accurate scale of compensation may be employed.

We are grateful to Dr. Kinney for explaining this new method of estimating hearing loss and feel sure that the men of this section will make the maximum use of it.

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SURGICAL OBJECTIVES*

By MARSHALL J. FAYNE, M. D., F. A. C. S., F. I. C. S.
Staunton, Virginia

THE political, social, and educational importance of the states comprising the territorial area serviced by the Chesapeake and Ohio railway system, is paramount and appreciated. The services of the Chesapeake and Ohio embrace for the most part the essential key states of the union. The agricultural and mineral wealth of this area is abundant and lasting; hence, industries of national importance are found contiguous to the Chesapeake and Ohio lines. The products of these vital industries find their way into practically every home in the United States, and many of them are distributed widely abroad.

The very nature of the railroad industry, both in times of war and peace (moving, as it does, important commerce of widely distributed regions expeditiously along the great trunk arteries of exchange), demands suitable, well-timed, high-powered machinery. The convenient, safe, and comfortable provisions for the rapid transportation of passengers, mail, express, and freight, require adequate fitting mechanical equipment. The constant increasing demands of patrons and regulatory laws continuously call for added modern facilities of the most highly approved type. The efficient operation and care of such equipment and facilities necessitate the services of skillful, well-trained, trusted, and highly paid employees. The safeguarding of patrons and employees, in order that injuries, sickness and consequent costly disabilities arising therefrom be avoided, is of fundamental importance. The successful operation of any industry must include the conservation of its most essential basic asset; that is, human life. No mechanical force or mechanism can be started or operated without the expenditure of human energy. The greatest ship, industrial plant, or the most elaborate train, will stand still until human energy opens the throttle. Railway systems, such as our Chesapeake and Ohio, have not and do not now neglect this human resource. Profitable returns from the conduct of any enterprise or industry, depend largely upon the cooperation of capable management and the efficient and loyal support of the employees. In this day, no business can hope long to survive and to be of service, without a reasonable financial

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Dr. Payne, graduate Jefferson Medical College; staff of King's Daughters' Hospital, Staunton, Virginia; Fellow American College of Surgeons and International College of Surgeons; president, N. and W. Surgical Association; president, C. and O. Surgical Association.

*President's Address: Association of Surgeons of the Chesapeake and Ohio Railway, White Sulphur Springs, West Virginia, November 8, 1940.

reward; hence, the need for maintenance of the employees' efficiency and industrial health.

In spite of the meticulous care employed by this great army of workmen to prevent accidents and consequent disabilities arising therefrom, injuries and sickness of necessity must attend the operation of so vast an enterprise. Whether, therefore, regarded by the newer trend of thought as a trade or as a profession, the surgeon will continue to be an important "cog in the wheels" of industrial life and cannot be eliminated. The employment then of a well-organized, carefully selected surgical staff is an essential, indispensable and integral part of the assets of industries, such as our railway systems. Unfortunately, neither the exact time nor place of the surgeons' work may be predetermined; hence, the need for well-chosen and capable surgeons, advantageously placed along the lines.

ORGANIZATION

For the reasons above cited, the surgical staff of the Chesapeake and Ohio has been adequately organized and judiciously placed, so as to give every possible safeguard and relief to its patrons and employees.

You, therefore, as individual members of the staff, have been selected or chosen by Dr. Wm. T. Oppenhimer and Dr. J. M. Emmett, not only on account of your surgical attainment, ability, and keen judgment, but more particularly for those qualities of character, manhood, and real worth that go to make you outstanding citizens and leaders of thought in your several communities.

The Chesapeake and Ohio staff and its component surgical association was fully organized by Dr. Oppenhimer, a prince among men, and the first meeting was held at the old White Sulphur Hotel in September, 1914. Dr. Oppenhimer was president. The Chesapeake and Ohio Surgical Association is composed of able and distinguished surgeons, active leaders of thought and in the practice of surgical affairs. Its members have presented at its several meetings masterly discussions of surgical problems of outstanding interest and practical worth.

Now to be called from the rank and file of an association almost national in its distribution, and certainly not surpassed in surgical understanding and practice, to its presidency, is an honor of the highest distinction. I cannot find words adequate or suitable to express to you my sincere appreciation of the honor that, through you, has come to me. I can only say, "Surely my cup is filled, for it runneth over." This preferment brings the difficult responsibility of properly representing you and the association—a responsibility which is increased on account of the ability of those who have previously served as president of this association. I should have been content to continue to serve in the capacity as an humble, loyal member of the staff.

And what of the future? I have tried to show the indispensable value and importance of the services of the individual surgeon in the operation of the affairs of industrial and business life. May we now consider some of the finer things that go to make sure the value of industrial surgery. By the finer things, we understand the enlarged recognition of the duty which the surgeon owes to the patient, to surgery, to himself, to his associates, to the company, its employees and patrons, and to the public; and, in addition, an even greater duty to the oncoming generation of newer surgeons.

FUTURE OF MEDICINE

What then is ahead in medicine, the healing art? Shall we adopt a phase of the newer-day philosophies for future purposes and become isolationists or totalitarians and submissive to the whims of governmental direction that eventually, if not sooner, would act to force the practice of medicine into some socialistic scheme, or even a trade, and thereby only to become the tool of collective bargaining to be prompted by some dominating governing organization, or shall we remain individualistic, deal with our asso-

ciates and patients in keeping with the code of high honor, be masters of our profession, captains of our fate, serve only the truth, and coordinate our effort and influence to broaden the science of medicine, that others may see undimmed the inherent wealth of the healing art.

"Yet each man following his sympathies,
Unto himself assimilating all,
Using men's thoughts and forms as steps to rise;
Who speaks at last his individual word,
The result of all things seen and heard,
Is in the noblest sense original."[7]

The healing art, the science of medicine knows no dogma, country, clime, race, or class. The hope for our continued strength and success rests in the final analysis on the power of the individual. Medicine seeks only the advancement of its beneficent purpose—the prevention and relief of human ailments and preservation of health. This achievement depends on the enlarged recognition of the duty of the individual members of our profession. The affairs of the present and the immediate future demand a suitable number of surgeons capable of doing highly acceptable surgery.

TRAUMATIC SURGERY

Traumatic surgery may be divided into three classes: First, accidental injuries sustained in civil life; second, accidental injuries sustained in industrial life, and in this class, I group the railroad injuries; and third, injuries accidental, explosive, and projectile sustained in military operations. All three classes of traumatic surgery will vary in extent and severity. In civil life, it is estimated that annually about one person in every twelve will suffer some slight or severe accidental injury. The modern use of the automobile has brought a newer type of injuries, especially difficult fractures, which are frequently unpromising in their treatment and results. The frequency of accidental injuries attending the operation of industrial business, though not yet entirely controlled, has been sharply reduced by education. The accident injury rate attending railway operation has been remarkably reduced. A strong, friendly competition between the Chesapeake and Ohio and the Norfolk and Western in a safety first program has been very fruitful.

Likewise, no one can predict, not even surmise, the rate of casualties attending military operations, or the lightning whirlwind modern battle movements. This new idea of warfare will prove ultimately to be a boomerang to the attacking army; it will be met with an even greater repelling force. The magnitude and volume of injuries will of necessity be enormous.

PREPAREDNESS

The objective for the medical profession to obtain, therefore, is surgical preparedness. Shall we be able to win? To a great extent, that may depend on the success attending the return of the wounded soldiers to arms, together with the conservation of the vital force, the working power of industrial life. "Loss of working time by skilled and indispensable workers, no matter what the cause, must be classed in war time as casualties which require mobilization of medical resources for competent handling just as do those which occur in the field. The medical profession needs to be well prepared to shoulder this special responsibility."[4]

The most fanciful mind cannot estimate the frequency and severity of war time injuries. It is evident that the surgical profession must be quickly and efficiently prepared to care for the industrial worker, as well as the slightly and the pitifully wounded combatants.

May we then ask: Is the newer generation of surgeons now coming into the ranks duly equipped and fitted for this work? I fear not. Example: I asked an honor graduate of an outstanding school, class of '39: "If called upon, what method of amputation would you make at the knee joint line?" Imagine my surprise when he replied: "I do not know." He then stated that he had not been taught the method of any amputation.

Charity would fail if it were to be served only by formally established organizations, functioning by the rule of some set formula. Charity is dependent on the exercise of good will of men toward one another. "And so it is with medicine, too. If the processes of teaching and learning were to be confided to the exclusive keeping of the formally established schools and professional organizations that exist to bring teachers and learners together, then we could be sure that the vitality soon would be gone from medicine, that the day would come when the failures of the past would never be much farther behind and the conquests of the future never much closer!"[2]

SERVICE OF PHYSICIANS

Without in the least minimizing the great work of our medical schools, I venture to say that the greatness of American medicine in our day lies in the objectiveness with which the active practitioners of American medicine face themselves and their work. They sympathetically serve humanity by making over ill bodies into health. They read, they visit associations, they question, they watch results, they confess imperfections, and in this way they seek the closer approach to perfection. They learn, they write, they reply, they oversee, they give of their knowledge to the end that there may be new knowledge; they teach.

"Two heads are better than one head, and when two heads are put together over a given question, what is that but a project of education, whether the scene be classroom, a hospital corridor, a telephone connection, or a doorway along a busy street?"[2]

The competency of surgery demands time, study, discernment, and abnegation, as was once tersely expressed by Professor Koenig: "It takes ten years to learn when to operate and forty years to learn when not to operate."[5] "But more than that, the surgeon's personality, cultural finesse, mental and moral refinement, honesty, and discipline (temperance) befit him for success and worthwhile contribution to our science."[9] Sir Frederick Treves, the great English surgeon, once said, "A shaking hand is embarrassing to the surgeon, but a shaking brain is fatal to the patient."[8]

I conceive it to be an important and vital duty of the present generation of medical men to foster the due education of the oncoming generation of surgeons, so that by the exercise of integrity, (there is no place in American medicine for dishonest diagnosis and treatment), technical skill, and ethical professional relations, the practice of surgery may reach "the pursuit of an ideal heraldic achievement."[9]

Just as we strive to serve and teach by percept and example, so shall we emulate the teachings of the "Sage of Monticello", when he said: "I am closing the last scene of my life by fashioning and fostering an establishment for the instruction of those who come after us. I hope its influence on their virtue, freedom, fame, and happiness, will be salutary and permanent."[3]

It is this strength of purpose and force of inherent self-controlled ability that will command and wield an insurmountable influence for the rightful exercise of the surgeon's helpful service to the human race.

Finally, with understanding and integrity of intent, let us continue to be individualistic Americans as we have been in the past, fashion our means and places of service at the side of the road, and with coordinated force and oneness of spirit, strive to reach the pinnacle in the school of attainment and be a friend to man. "For where the vanguard of science rests today, the rear will rest tomorrow."[6]

"Earth's highest yearns to meet a star."[7]

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DIFFERENTIATION OF GENITOURINARY AND GASTROINTESTINAL PATHOLOGY*

By JOHN F. McCUSKEY, M. D.
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A UROLOGIST is soon impressed by the number of patients who have urinary tract lesions but have symptoms and signs ordinarily associated with the gastro-intestinal tract. This paper is based on a consecutive series of forty-three patients with urinary tract pathology, seventy-seven per cent of which had some signs or symptoms usually thought of with reference to the gastro-intestinal tract.

The most common reason for diagnostic error in this group of patients is the failure to appreciate the close interrelation of genito-urinary and gastro-intestinal symptomatology. This leads to a series of errors, the most common being incomplete preoperative surveys.

If one were asked to enumerate, in general, the most important signs and symptoms of pathology in the gastro-intestinal tract and genito-urinary tract, they would probably appear something like this:

Gastro-intestinal:

1. Abdominal discomfort.
2. Abdominal pain.
3. Nausea and/or vomiting.
4. Fever.
5. Evacuatory changes.
   a. Diarrhea.
   b. Constipation.
   c. Blood, pus, or mucus.

Genito-urinary:

1. Back or abdominal discomfort.
2. Back or abdominal pain.
3. Fever.
4. Urinary changes.
   a. Frequency.
   b. Oliguria.
   c. Blood.
   d. Pus.

*Read before the Central West Virginia Medical Society, Gassaway, West Virginia, February, 1941.

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Strict adherence to this classification is apt to cause erroneous diagnoses. Probably the most frequent error is committed in the consignment of the symptom, nausea, with or without vomiting, to lesions occurring only in the gastro-intestinal tract. This is not an unreasonable error because it is taught that nausea is a reflex phenomenon that occurs with abnormality of motion in the duodenum and duodenal cap. The overlooked fact, however, is that the stimulus for this reflex may arise in any of the large systems. Best and Taylor[1] writes, "The stimulus which induces nausea is apparently the same as that which causes visceral pain, but of lower intensity." Thus, any change in motion or pressure in any hollow muscular organ may induce nausea. Sudden change of pressure in the vascular tree, respiratory tree, and gastro-intestinal tract can, and does, produce nausea. From the review of these genito-urinary cases, it can be definitely stated that the majority had nausea with or without vomiting.

FEVER

Fever is a symptom that admittedly might arise in either system. Even evacuatory changes, such as diarrhea or constipation, occur with lesions of the urinary tract by way of reflex stimulation or inhibition of intestinal peristalsis. It is not uncommon in acute urinary tract pathology to see a flat x-ray of

the abdomen that appears to be an intestinal obstruction.

Differentiation often leads one to be too liberal with the interpretation of the urine. Too many genito-urinary cases have a normal urine to warrant this.

Fig. I (Case 1). In the prone position there is kinking of the ureter with dilatation of the ureter, pelvis and calyces.

Urine from a pathologic kidney may be completely obstructed by a stone, ureteral kink, large hydronephroses, etc. The kidney may be non-functioning, as in tumors or staghorn calculus. A normal urine, then, is not sufficient evidence to rule out urinary tract disease.

Another common pitfall in the diagnosis of these cases is the subjective complaint of pain or discomfort. The description given by the patient can be helpful if the physician will ask certain questions. Simply to have the patient describe the location of the pain is not sufficient because it is difficult for the patient to distinguish upper abdominal from loin pain, and lower abdominal from pelvic pain. Brown and Pennington,[2] in a recent paper, discuss the relation of pelvic symptoms to urinary tract pathology.

Most pertinent questions concern radiation and the effects of eating, bowel movements, and urination. Gastro-intestinal lesions usually have a focus from which the radiation is toward the umbilicus or epigastrium. Genito-urinary lesions have a painful locus which usually radiates toward the loin, along the ureter, toward the symphisis pubis, the genitals, or the inside of the thigh. Bowel movements or eating are more apt to aggravate or relieve gastro-intestinal lesions. Voiding may have the effect of aggravating or relieving genito-urinary lesions.

There is a group of diseases in the lower urinary tract, rectum, and anus which often require close differentiation. Patients so afflicted will complain of discomfort in the lower back, thighs, and hypogastrium. They may complain of fullness in the rectum, itching near the anus, frequency of urination and dysuria. Any of these complaints may originate from such pathology as hemorrhoids, fistula-in-ano, fissures, polyps, prostatitis, seminal vesiculitis, verumontanitis, and posterior urethral pathology. Voiding usually

Fig. II (Case 1). In the upright position the rotation of the kidney obstructs the upper third of the ureter.

aggravates urethral and prostatic complaints, but has little or no effect on rectal lesions. Bowel movements aggravate rectal lesions and usually relieve symptoms if the disturbance is in the lower urinary tract. The palpating finger in the rectum may readily deter-

mine the source. Pressure over the verumontanum, prostate, or seminal vesicles will frequently reproduce the patient's complaints. Final diagnosis is made by the anoscope and urethroscope.

This generalized overlapping of symptomatology is readily understandable when one recalls that both great systems have the same nerve supply. The sympathetic nerves, through the celiac plexus, supply the upper gastro-intestinal tract and upper urinary tract, and by way of the inferior mesenteric and hypogastric plexuses, the lower urinary and gastro-intestinal tracts. The parasympathetic nerves, by way of the vagus, supply the upper urinary and gastro-intestinal tracts, and by way of the sacral nerves, the lower gastro-intestinal and urinary tracts are supplied.

Conditions most commonly to be differentiated are: (1) palpable masses, (2) unexplained fever, (3) unexplained pain or discomfort, (4) calculus, (5) hydronephrosis or obstruction from any cause, (6) nephroptosis, (7) pelvic disorders in the female, (8)

Fig. III (Case 2). Stag horn stone in the left kidney unobserved from gastrointestinal studies because scout film had not preceded barium studies.

cholecystic disease, and (9) chronic appendicitis.

A critical review of these patients revealed that the majority had been studied by barium enema, barium meal, and gall-bladder visualization. Exploratory laparotomy was done if these procedures did not establish a diagnosis.

It would seem, then, from this study, that gastro-intestinal visualization is of no greater importance than genito-urinary visualization, and that both should be done before an ex-

Fig. iV (Case 3). Immense right pyonephrosis embarrassing the liver and gall-bladder.

ploratory laparotomy. This is especially true when one considers that intravenous urography is painless and informative.

CASE REPORTS

Case 1: Right ureterectasis, torsion of the ureter, and pyelectasis. Mrs. M. C. Age 31.

Complained of an aching pain in the lower right side and occasional fullness in the loin, especially after having been on her feet. These complaints were accompanied by nausea. The urine was clear, and no masses were palpable in the abdomen. She had had previous diagnosis of ovarian cyst on the right, chronic appendicitis, and had an operation for appendicitis, at which time no ovarian cyst was found. The previous complaints were still present after operation. The retrograde pyelogram in the prone position showed a dilatation of the major calyces, pelvis, and ureter, with considerable kinking and dilatation at a point halfway down the ureter. The retrograde pyelogram in the upright position showed a complete obliteration of the upper

third of the ureter, with dilation of the pelvis and ureter.

At operation, the kidney was found to rotate on its perpendicular axis, and the ureter, instead of being in its normal position, was wound around the lower pole of the kidney and entered the hilum of the kidney on the anterior surface. In this fashion, when the patient was on her feet, the kidney would

Fig. V (Case 4). Left ureteral calculus. The patient had fever, nausea, vomiting and pain in the left lower abdomen. Previously thought to be diverticulitis of the colon.

rotate and obstruct the upper third of the ureter. A nephropexy and ureterolysis were done with complete symptomatic relief.

Case 2: Left stag horn calculus with pyonephrosis. Mr. P. H. Age 44.

Had complained of nausea, vomiting, and eructation. The urine was essentially clear. Barium examinations had been negative. The urologic examination showed a stag horn calculus in the left kidney which had not been discovered on previous barium x-ray examinations because a scout film had not been taken.

The removal of the affected kidney gave symptomatic relief of the gastro-intestinal symptoms.

Case 3: Right pyonephrosis. Mrs. V. M. Age 54.

Complained of intermittent attacks of upper right quadrant pain, right scapular pain, and selective dyspepsia. Attacks were accompanied by fever. There had been reports in the past two years of pus in the urine. However, at the time of the urologic examination, the bladder urine was clear. A tentative diagnosis was cholecystic disease, and cholecystectomy was advised. However, since on some previous occasion she had had pus in the urine, a urologic examination was requested and marked pyonephrosis was found.

At operation the pyonephrotic sac was found to be densely adherent to the right diaphragm and had embarrassed the liver and gall-bladder by reason of its size. The pyonephrotic sac was removed. Postoperative recovery was uneventful. One year after operation, there had been no recurrence of the previously frequent gall-bladder attacks.

Case 4: Left ureteral calculus. Mr. C. M. Age 48.

Complained of pain in the left side over the anterior superior spine of the ileum. The pain was

Fig. VI (Case 5). Intravenous urogram showing suspected left ureteral calculus with calyectasis in poorly functioning kidney.

accompanied by fever, nausea, and vomiting. The urine was clear. Catheters were passed to both kidneys. The urine from the left kidney contained blood and pus cells. Catheter passed with difficulty an obstruction four cm. above the bladder on the left side. Pyelogram showed a ureteropyelectasis on the left side above a stone at four cm. above the bladder. Ureteral dilation and manipulation of the

stone facilitated its passage two days later. The symptoms of fever, nausea, and vomiting disappeared immediately.

Case 5: Left ureteral calculus. Miss S. M. D. Age 29.

Intermittent attacks of pain in the lower left quadrant, accompanied by anorexia, nausea, vomiting, and loss of weight for two years. Three complete x-ray examinations of the gall-bladder and gastro-intestinal tract revealed no pathology. There were no urinary complaints or abnormal constituents of the urine. Each time she was admitted to the hospital for examinations, she would become symptom free in a few days. Because of this fact, and the negative findings on the x-ray, she was considered to be neurotic. On a subsequent examination, however, the urologist was called in consultation. A scout film, which had not been done on previous examinations, revealed a calculus in the left ureter. The left kidney was completely obstructed and showed dilation of the calyces and pelvis with marked decrease in function. Uretero-

Fig. VII (Case 5). Tip of ureteral catheter proving suspected calculus obstructing the left ureter.

lithotomy was performed, giving complete relief of symptoms.

SUMMARY

1. There is presented a series of forty-three patients with urinary tract pathology, but having symptoms usually associated with the gastro-intestinal tract.

2. Nausea, with or without vomiting, occurs in a high percentage of patients with genito-urinary pathology.

3. Advanced urinary tract disease may be present with normal urine.

4. The radiation of pain is an important point in differentiation of gastro-intestinal and genito-urinary lesions.

5. The generalized overlapping symptomatology of these two systems comes by way of their common sympathetic and parasympathetic nerve supply.

6. In this series of patients, genito-urinary visualization is of equal importance with gastro-intestinal visualization.

7. Intravenous urography is an excellent procedure in the type of patient observed in this series.

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Acidity of Human Body is a Popular Fallacy

"So-called acidity of the human body is a popular fallacy," *Hygeia, The Health Magazine* states in answer to an inquiry in a recent issue.

"An acid is a sour substance which has certain effects on the color of chemical test substances or indicators and which combines with alkalis to make neutral substances known as salts," *Hygeia* explains. "An alkali on the other hand is a bitter substance which has the opposite effect on chemical indicators and which combines with acids to make salts. Some acids and some alkalis are strong and therefore destructive while others are weak and relatively harmless. Some acids are useful, some poisonous; the same is true of alkalis.

"The human body is neutral with a strong alkali reserve. It never becomes acid except after death and its alkali reserve is reduced only in severe illness or starvation.

"There are, however, certain bodily secretions which are normally acid and which should be acid. These are the perspiration, the stomach secretions, the urine and possibly the saliva. Attempting to alkalize these normal acid secretions is foolish."

THE MEDICAL LIBRARY OF WEST VIRGINIA UNIVERSITY

By G. S. DODDS, Ph. D.
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THE library of the medical school of West Virginia University at Morgantown includes by far the largest collection of medical books and periodicals in the state. It is for this reason that a brief account of the library may be of interest to the readers of the JOURNAL.

It is quite unnecessary to point out to the average physician the importance of books. By the time he has graduated from medical school, he already has a surprisingly large personal investment in the textbooks which he has been obliged to buy. Moreover, he knows that these textbooks comprise but a small portion of the printed matter which has contributed to his medical education. He doubtless has done considerable collateral reading in the medical school library. He is aware also, at least vaguely, that beyond his own reading experience, there exists a vast store of literature from which the faculty has drawn the teaching material used in classroom, laboratory, and clinic. All physicians know full well the necessity of medical literature in their own practices. They know its cost, and they have experienced the difficulty in finding the time for necessary reading in current medical publications.

TWO YEAR CURRICULUM

In considering the medical library of West Virginia University, it should be remembered that this school of medicine gives but the first two years of the medical curriculum. The school is recognized and approved by the accrediting agencies (American Medical Association and Association of American Medical Colleges) as a "school of basic medical sciences." There are twenty-four members of the faculty. The first year class may not exceed thirty students (it usually has been a little smaller). Second year students number between twenty and twenty-five.

THE AUTHOR

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The medical building is small, scarcely large enough to accommodate classrooms, laboratories and staff offices. There is no space available for library. Consequently, the medical volumes are housed in the university library building along with volumes of other departments of the university. Of course, this situation is somewhat of a disadvantage to the school of medicine. Each department of the university would like to have all the volumes it uses shelved immediately adjacent to its classrooms, and there is no question that both faculty and students would profit definitely by such a convenient arrangement of library materials. It must be recognized, however, that to realize such an ideal arrangement for all departments of a university, there would have to be several copies of many of the volumes, because there are relatively few volumes which are so highly specialized and restricted as to be of interest and importance to only one department. Or, conversely, students in any field of knowledge have need of ready access to the literature of many related fields.

This is especially true of the literature needed by a medical school, because, in addition to the purely medical literature, there are the related fields of botany, chemistry, pharmacy, psychology, zoology and certain branches of agricultural science which are essential to the medical school and, at the same time, to other departments. The still more remote fields of entomolgy, mathe-

matics, medical jurisprudence, photography, physics, sanitary engineering, social studies, statistical analysis, etc., become of interest and even of great importance to medical men with certain specialized interests and needs. Here, as elsewhere, there is no sharp line of demarcation between "pure" and "applied" sciences. It is unquestionably an advantage to all library users to have all of these diverse types of publications conveniently accessible in a central location.

CENTRALIZED LIBRARY

A diversified, centralized, university library has the advantage that in it the volumes may be under the care of a competent librarian with a trained staff. Moreover, it may be kept open with proper supervision for many hours every day. These conditions could not be realized adequately in a small departmental library. On every university campus there exists this problem as to whether the library facilities should be strongly centralized or whether there should be a number of departmental libraries. The answer usually is determined, as at West Virginia University, by local expediency. The housing of the medical library in the general library building has been found satisfactory on other campuses where the medical school and the library building are reasonably close together.

The disadvantages of not having the medical library in the medical building are minimized further by the privilege extended to faculty members of borrowing volumes under library rules. As a result, there are available, at all times, in the medical building, a considerable number of volumes from the library as they are needed in connection with current work. Other volumes are conveniently available to students for assigned readings at the reserve desk in the university library, where they may be used in a comfortable and well-lighted room.

During the past few years the school has made a determined effort to increase the adequacy of its medical library both in content and availability. To this end the medical faculty has a committee whose responsibility it is, in cooperation with the dean, to direct the expenditure of library funds in the purchase of the most useful materials, and to maintain a balanced distribution between the various departments of the school. One of the members of this committee is also a member of the university library committee.

It is impossible to estimate accurately the number of volumes in the university library which should be classified as belonging to the medical library, because of the overlapping interests already mentioned. Many volumes absolutely essential to the school of medicine are purchased from funds allocated to other university departments. Herein lies a definite economy when the medical school is in close relations with a diversified general university library.

13,000 VOLUMES

As a fair estimate, there are in the library of West Virginia University about 13,000 catalogued volumes which may properly be considered as essential parts of the medical library. Roughly half of these are bound volumes of periodicals; the rest are books of various sorts. The periodicals include by far the greater volume of reading matter and the greater outlay of money. A special effort is being made to maintain, without interruption, subscriptions to a reasonable list of the most important periodicals in the various fields. The library is receiving regularly over 100 such periodicals, a list of which is appended to this paper.

Inasmuch as only the first two years (preclinical years) of the medical course are given in the school, the library facilities are naturally more adequate in the basic medical sciences, anatomy, physiology, biochemistry, bacteriology, pathology and pharmacology, than in the clinical branches. There are included, however, numerous books and some of the leading journals in the fields of medicine, surgery, gynecology, pediatrics, etc. These will form a good foundation for more

complete coverage of these fields when the two clinical years are added to the school at some future time. The current numbers of the journals are conveniently available in the general reading room, and bound volumes of earlier years (to the number of about 4,500) are housed in the adjacent stacks.

This list does not include, by any means, all the medical periodicals and serial publications of various kinds that are represented in the library. There are files of a considerable number of medical periodicals which were formerly on the subscription list but have been discontinued, chiefly foreign publications, of which there are long series of bound volumes which still are of definite value. These have been dropped from the list either because the cost has become prohibitive or they no longer are available. In addition, there now are being received a goodly number of "reports", "transactions", "studies", "bulletins", "lectures", "yearbooks", etc., published by various federal and state agencies, and by hospitals, societies, academies, universities, commissions, etc. Space does not permit a detailed list.

INDICES

Among the very important publications in the library are complete files of the Quarterly Cumulative Index Medicus (75 volumes; years 1879—date). There are 36 volumes (1896—date) of the Index Catalog of the Library of the Surgeon General's office. (Army Medical Library. In these indices are listed all current publications in the field of medicine, including name of author, title, place and date of publication. These listings are so arranged in classified order that one may readily find references upon any medical subject or by any desired author. In the library there are also several other abstracting publications in specialized fields, notably in anatomy, bacteriology, chemistry, pathology, pharmacology and physiology. Such publications give, in condensed form, at regular intervals, a classified and indexed summary of current literature, together with abstracts of the papers listed. This type of publication is invaluable to those who wish to keep generally informed about current publications, or who need to make a survey of the literature in any particular field in connection with special problems being studied.

BIBLIOFILM PROCESS

When there is need for volumes which are not included in the university library, the librarian can borrow them from other libraries, such as the Surgeon General's Library, etc. The university library is equipped to make photostatic copies of articles, as is also one of the departments of the medical school. A development of recent years is the photographing of articles, page by page, on 35 mm. moving picture film (known as the bibliofilm process). Such copies may be purchased, at a very reasonable cost, from several agencies which maintain this service. The small films may be read with the aid of a magnifier, or more conveniently, by a reasonably priced projection machine which throws the image upon a small screen. By these two methods there may be secured copies of articles which, in their original forms, cannot be purchased at all, or only at prohibitive cost. These services have been of great value to the medical school. As an outstanding utilization of such methods, the Department of Bacteriology of the School of Medicine has built up, in the past few years, a collection of papers on anærobic bacteria, including over 5,000 articles. These papers are in the form of reprints, photostatic copies, and bibliofilm copies.

The medical school administration desires that the medical library be of definite usefulness to the medical profession of the community. Of course, all physicians are very welcome to visit the library and to make use of its facilities, either in the pursuit of current reading or in looking up special subjects. The library staff gladly renders necessary assistance. For those unable to visit the library in person, there is maintained a "package library" service, through which loans are

made by mail. Or the library will make photostatic copies of articles in the library at actual cost, for those who desire permanent copies. The librarian will be glad to put inquirers in touch with one of the bibliofilm services which have access to more extensive libraries. For information, address W. P. Kellam, Librarian, West Virginia University, Morgantown, West Virginia.

PROGRESS

The medical school authorities consider that the library, as at present constituted, is thoroughly sound. It includes a very representative collection of good works in the different branches of medical knowledge. There is, on the other hand, a definite awareness of its limitations. It is by no means up to the ideals set for it by the school and toward which it is striving. The past five years have seen much progress. Twenty-one important journals have been added to the subscription list and many completed volumes of former years have been purchased to fill gaps in incomplete sets. Many books of various kinds have been added. During these years the usefulness of the library has been increased further by more adequate cataloguing, by better arrangement on the shelves, and by improved accessibility of current pediodicals and recent unbound numbers. This progress is due, in part, to the progressive policies of the university librarian and in part, to persistent activity of the medical library committee. The plans for future progress lie along the same lines. They can be carried out only as fast as funds are available for purchase of library materials and for maintaining an adequate library staff.

Looking into the future, the staff of the school of medicine likes to visualize a medical school in West Virginia which gives the entire four years of the medical course, housed in adequate buildings, with a greatly augmented library. Such a library would serve not only the immediate teaching needs of the school, but would be a useful reference center for the physicians of the state.

The following periodicals are being received regularly by the medical library of West Virginia University:

American Anthropologist, American Chemical Society — Chemical Abstracts, American Chemical Society—Journal, American Heart Journal, American Journal of Anatomy, American Journal of Cancer, American Journal of Clinical Pathology, American Journal of Digestive Diseases, American Journal of Diseases of Children, American Journal of Hygiene, American Journal of Medical Sciences, American Journal of Obstetrics and Gynecology.

American Journal of Pathology, American Journal of Physical Anthropology, American Journal of Physiology, American Journal of Public Health, American Journal of Surgery, American Naturalist, American Pharmaceutical Association — Journal, Anatomical Record, Anatomischer Anzeiger, Anesthesia and Analgesia, Annals of Applied Biology, Annals of Internal Medicine, Annals of Surgery.

Annual Review of Biochemistry, Annual Review of Physiology, Archives of Dermatology and Syphilology, Archives of Internal Medicine, Archives of Neurology and Psychiatry, Archives of Pathology, Archives of Pediatrics, Archives of Surgery, Biochemical Journal, Biological Abstracts, Biological Bulletin, British Chemical and Physiological Abstracts, British Medical Journal.

Carnegie Institution of Washington—Publications on Embryology, Catalog Index of the Library of the Surgeon General's Office (Army Medical Library), Chinese Journal of Physiology, Current List of Medical Literature, Endocrinology, Genetics, Human Fertility, Hygeia, Johns Hopkins Hospital Bulletin, Journal of Abnormal and Social Psychology, Journal of American Diatetic Association, Journal of Anatomy, Journal of Applied Psychology, Journal of Aviation Medicine.

Journal of Bacteriology, Journal of Biological Chemistry, Journal of Bone and Joint

Surgery, Journal of Cellular and Comparative Physiology, Journal of Clinical Endocrinology, Journal of Comparative Neurology, Journal of Comparative Psychology, Journal of Criminal Psychopathology, Journal of Experimental Medicine, Journal of Experimental Psychology, Journal of Experimental Zoology, Journal of General Physiology, Journal of Genetics.

Journal of Heredity, Journal of Immunology, Journal of Infectious Diseases, Journal of Laboratory and Clinical Medicine, Journal of Morphology, Journal of Neurophysiology, Journal of Nutrition, Journal of Organic Chemistry, Journal of Parasitology, Journal of Pathology and Bacteriology, Journal of Pharmacology and Experimental Therapeutics, Journal of Physiology, Journal of the American Medical Association, Journal of the Association of American Medical Colleges, Journal of Urology.

Medical Classics, Medical Record, Medicine, Mental Hygiene, New England Journal of Medicine, Nutrition Abstracts and Reviews, Physiological Abstracts, Physiological Reviews, Psychosomatic Medicine Monographs, Phychosomatic Medicine, Quarterly Cumulative Index Medicus, Review of Gastroenterology.

Science, Science News Letter, Scientific Monthly, Society for Control of Cancer—Bulletin, Society for Experimental Biology and Medicine — Proceedings, Southern Medical Journal, Stain Technology, Surgery, Gynecology and Obstetrics, The Diplomate, War Medicine, West Virginia Medical Journal, Zentralblatt fur Bakteriology (three parts).

If the fire departments were to refuse to fight fires started by cigarettes not made in the home county, they would be no more ridiculous than are we when we refuse to fight tuberculosis in a person who has not lived long enough in one spot to establish legal residence.—T. J. Werle, *Health*, May-June, 1941.

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

Experience in the first World War taught us the importance of discovering tuberculosis among military men. When the Selective Service Act went into effect, the Navy was requiring a chest roentgenogram for all enlisted and commissioned men, and the Army for the commissioned personnel only; facilities for routine roentgenography of all men were not at first available. Among the civilian agencies which supplemented the efforts of the Army in this emergency was the Bureau of Tuberculosis of the New York City Department of Health. A record of that organization's experiences is published in the *Journal of the American Medical Association* from which these abstracts are taken.

X-raying Military Men

An order issued October 28, 1940 by the Adjutant General's Office of the United States Army made it possible for civilian organizations to set up a roentgenographic service for men inducted into the Army. It provided for payment for x-ray films and for the services of civilian roentgenologists (under due control) until such time as the Army could assemble its equipment and assume full responsibility.

The Bureau of Tuberculosis of the New York City Department of Health, has been engaged in mass roentgen-ray surveys of the apparently healthy population since 1933. These surveys have been accepted as a basic part of the tuberculosis control program of New York City and thus interest, based on experience, in providing a similar service for inductees and members of the state national guard was rife. Accordingly, the bureau's mass roentgen-ray services which were made possible through the WPA, were offered to the surgeons of the Second Corps Area prior to the adjutant general's directive that was issued on October 28, 1940. Financial assistance was received from the tuberculosis associations of Queens and the Bronx.

After January 1, 1941, the Army assumed full financial responsibility for the roentgen-ray service in induction centers. The department provided personnel for the interpretation of films. Since January 15 this service has also been taken over by the Army, which has assigned medical reserve officers qualified in this special field. The roentgenograph-

ing of national guardsmen has been entirely at the expense of the department of health. Under existing regulations the Army could not pay for this service until after induction, and it was important that rejections be made before induction.

At the outset there were four induction stations. Since January 1, 1941 all work has been done in two stations, one in Manhattan and one in Queens.

Those rejected men who were residents of New York City were given an appointment within the next two or three days to appear at the Health Department's Central Chest Clinic, where a complete study of the case was made. If this examination proved the original findings to be of no significance, the local draft board was so notified.

Rapid roentgenographic service was necessary as the recruit was supposed to be cleared through all examinations by 2:30 p. m. of the day he reported at the induction station. With from 60 to 300 men per unit to be handled daily, even the rapid roll method used in the routine survey program was inadequate. Consequently a special type of apparatus was devised. A modification of the roll paper camera was used in connection with a specially constructed portable dark room measuring eight by eight feet with the back of the camera integrated into one side of the dark room. A signal device was installed between the roentgen ray technician and the dark room. As soon as a film was exposed, the signal was flashed and the dark room crew cut off the film and placed it in the developing bath. The signal was then reversed indicating that another film was ready to be exposed. A team of three, consisting of a technician and two dark room assistants, were able to operate faster than one exposure a minute. The films were processed in large trays and from the fixing bath were passed out to the physician through a light-proof pass. After being read, the films were washed in a portable tank and dried in a special device designed for the purpose.

Acceptance or rejection was based on Army regulations. Men showing any form of reinfection types of tuberculosis were rejected because lesions of such types may become aggravated under conditions of military service. Primary lesions considered as active or extensive calcifications were likewise cause for rejection. Other forms of significant pulmonary disease, such as bronchiectasis, pneumonitis, atelectasis, or extensive pleural changes, were cause for rejection until further study could determine their importance. Men with obviously abnormal cardiac silhouettes were reported to the medical examiners for such further study as might be indicated. Men with nothing more than apical caps, and those with small well-healed primary lesions were not rejected.

The group of men examined up to January 15, 1941 during which the department of health was actively engaged in the program, included 6,609 inductees and 9,541 guardsmen, a total of 16,150 individuals who were x-rayed.

Of the inductees, 1.36 per cent were rejected and of the guardsmen, 1.21 per cent. About one-third of the guardsmen were below the age of 21, while only about 0.5 per cent of the inductees were below that age. An all-Negro regiment (national guard unit) had the highest mean age in all groups and the highest rate of rejection, which was almost entirely on the basis of pulmonary tuberculosis. If the findings in this unit are subtracted from the totals of all guard units a greater difference will be found between guardsmen and inductees.

Classification by stages of disease of the 70 men considered clinically significant shows that 65.7 per cent were minimal, 32.9 per cent moderately advanced and 1.4 per cent far advanced. Primary lesions indicated by calcific deposits were found in six per cent of the white men. 8.7 per cent of the Negroes and 7.1 per cent of the Puerto Ricans.

The group of men examined since January 16 and through March 31, 1941 totaled 35,210 men. During that period the department of health's part has been to re-examine and classify New York City men rejected at the induction center. In this time 458 men have been rejected, 379 of whom have thus far been cleared at the health department clinic. In 49, or 12.9 per cent of those re-examined the cause for rejection at the induction station was not confirmed and the man was considered suitable to be accepted in the Army from the standpoint of his roentgenogram.

A detailed cost analysis of personnel, equipment and materials necessary to complete this study indicated a total of $23,614.20. Using this as a basis for computation, the unit cost to examine each individual by roentgenogram was $1.47. (The cost of taking a roentgenogram and its interpretation without any further follow-pu was $13,911.20, or 58.8 per cent of the total). The unit cost of rejecting a man for military service on the basis of the total cost was $106.02 for inductees and $122.37 for guardsmen.

President's Page

After more than a year of filling out forms and questionnaires, of serving on draft boards and defense committees, and of studying reports on potential wartime hazards, I venture the opinion that most of the doctors of West Virginia are getting "fed up" on medical defense preparedness. To those who feel that we have had an overdose of this medicine, let me quote an official bulletin issued in England in 1938, just before the beginning of hostilities, which discussed measures for safeguarding the civilian population of Great Britain:

"The need (for these measures) is not related to any belief that war is imminent. It arises from the fact that the risk of attack from the air, however remote it may be, is a risk that cannot be ignored, and because preparations to minimize the consequences of attack from the air cannot be improvised on the spur of the moment, but must be made, if they are to be effective, in time of peace."

If West Virginia was tucked away somewhere between Colorado and Nevada, and if West Virginia had no coal, oil and gas and chemical industries, then I think we might "slow-along" and wait for something to happen. But living no great distance from the Atlantic seaboard, and in a state rich in the necessities of war, we would present a fertile field for enemy attack should war come. Let us not feel therefore, that the office of civilian defense is for the other fellow.

We hope our West Virginia physicians and surgeons will give enthusiastic support to the basic plans for the organization of emergency medical field units, related to hospitals, which can be adapted to the needs of our own communities. Let us do our part in getting ready for actual air attack, "however remote it may be."

Robt. S. C. Bufford

President.

West Virginia Medical Journal

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CHARLESTON, WEST VIRGINIA

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WELCOME HOME, JOE

At the May meeting of the Council a four months' leave of absence was granted Mr. Joe W. Savage, executive secretary of the West Virginia State Medical Association and business manager of THE JOURNAL. This leave was granted in order that Mr. Savage might have time to investigate and organize the crippled children's work for the national organization sponsoring that activity and headed by Mr. Basil O'Connor. This task has now been accomplished and Mr. Savage returns to his work in West Virginia. The profession of the state has seriously missed Mr. Savage, and THE JOURNAL has been very much handicapped. The truth is that the Publication Committee didn't realize how valuable Joe's work has really been until he was away, and gladly welcomes him back. From some of the postcards he has sent us, we wonder if all his time has been spent in crippled children's work, or if some of it has been consumed in the investigation of Navajo villages and in casting for the elusive trout in the babbling brooks of the Sierras.

Be that as it may, welcome home, Joe. All is forgiven. Settle back into the old job and carry on. But if you ever leave us again, here and now we promise and threaten dire corporal punishment.

A MENTAL DISEASE PROGRAM

It is with keen gratification that we note a press report to the effect that Governor Neely plans to request a survey of the psychiatric needs of West Virginia by a representative of the United States Public Health Service. The press also has carried an announcement that the governor plans a mental hygiene program for the state. We heartily approve both projects. A survey by the Federal Health Service has much to commend it and will afford us an opportunity "to see ourselves as others see us" and to have our needs estimated by competent and disinterested personnel.

The mental disease situation in our state is no worse than in the country at large and not so bad as in some of the other states. A recent article in *Reader's Digest* on "Our Ailing Mental Hospitals" sums up the situation very well. What is actually needed in the country at large is more money for the mental disease progams in the various states. With very few exceptions the state mental hygiene programs are either unborn or still in swaddling clothes. It has been observed that the percentage incidence of mental disease increases as does the density of population. Hence it is imperative that a program of mental prophylaxis be inaugurated and developed rather than to allow an increased burden of insanity to befall our population.

Last month we called attention to the very inadequate pittance expended per patient per day for the care and treatment of the mental patients in the West Virginia state hospitals. A large percentage of mental patients are curable, but satisfactory results cannot be obtained by an expenditure of fifty cents per patient per day. It is a responsibility of the physicians of the state to see that our legislators understand the mental needs of our people and are urged to appropriate sufficient money to give this unfortunate segment of our population, who cannot speak for themselves, the care and treatment they actually need.

TUBERCULOSIS CONTROL

Dr. Leo H. Mynes, in his presidential address before the West Virginia Tuberculosis and Health Association at the recent meeting at Beckley, advocated the compulsory hospitalization of open cases of tuberculosis. At this meeting the Sixth Councillor District of the West Virginia State Medical Association passed a resolution (appearing on page 472) favoring this compulsory hospitalization.

Much has been accomplished in the battle against the great white plague, both as to lessening the morbidity incidence and the mortality rate. The 1940 death rate was less than one-fourth that of 1900, and Louis I. Dublin has recently predicted that the next decade will see the present death rate cut approximately one-third. The volunteer tuberculosis associations have done superb work and education has accomplished much. The "Captain of the Men of Death" has, in army parlance, been demoted to a line sergeant, but if tuberculosis is every actually eradicated it will be through the adoption of Dr. Mynes' suggestion. We called attention to this in an editorial in last month's issue, and suggested that the great bulk of the monetary cost of such a procedure would of necessity have to be paid out of public funds.

We commend the suggestion of Dr. Mynes to the earnest consideration of both laity and profession. The question may be raised as to the wisdom of quarantining the actively tuberculous, for that is in essence Dr. Mynes' proposal, but sober meditation will lead to the inevitable conclusion that Dr. Mynes is right, and that his suggestion, if adopted, will finally make tuberculosis as rare as smallpox and typhoid now are.

A democracy, however, is slow in learning lessons. Every veteran of World War I who developed tuberculosis has cost the federal government, on an average, more than $10,000. Yet with this stern lesson staring us in the face and with more than 2,000,000 men already in our armed forces, we are just awakening to the necessity for plating the chest of recruits as a part of the routine physical examination for entrance into military and naval service.

Some day we will adopt Dr. Mynes' suggestion, and for the good of humanity we trust it will not be too far in the future.

CANCER STAMP CAMPAIGN

The American Society for the Control of Cancer has written to enlist our aid in a campaign to have the Post Office Department issue a postage stamp to help in the fight against cancer. Mrs. Edith Rogers, representative from Massachusetts, has consented to direct their efforts in Washington. She has discussed the possibility of a cancer stamp with Postmaster General Walker. It was Mrs. Rogers who presented the bill to congress which resulted in April being designated as cancer month.

We are urged to develop immediately a great flood of mail to Washington. Letters should be sent direct to President Roosevelt now, petitioning the issuance of a postage stamp with a cancer design. The objective is to have the stamp issued April 1, coincident with the beginning of cancer month.

At the risk of imposing on you, may we ask you to write such letters and ask your friends to do the same. Call on influential leaders in your community, such as college presidents, deans and professors, clergymen, industrial leaders, mayors, health officials, officers of various local, state and national groups such as Lions, Kiwanis, Rotary, etc. If possible, it would be very helpful to mention the matter personally to congressmen whom you or your friends may know.

It is hardly necessary to point out that the medical associations throughout the country have the fight to control cancer ever in the foreground of their united effort, and the work of the American society has the endorsement and cooperation of all.

THE 1942 CONVENTION PROGRAM

It is the feeling of some members of the Program Committee that, since the great majority of doctors who attend our annual meetings come under the category of general practitioners, our progams should be so constructed as to interest these men especially. A survey made following the 1941 meeting at Charleston, showed that there were approximately five general practitioners attending the meeting for every specialist. A large number of our rural and small town doctors do not have the opportunity to attend out-of-state meetings and clinics, whereas those in specialized practice in urban areas can take occasional opportunities to attend special meetings in different parts of the country which are devoted to these specialties.

The program committee requests that doctors interested in the scientific content of next year's program please send in their ideas and suggestions to the committee, or direct to the Association headquarters office. Members of the committee are Doctors Andrew E. Amick, Charleston, chairman; R. J. Condry, Elkins, and Wade H. St. Clair, Bluefield.

This new idea of holding a "family doctor" program may have a genuine appeal and some very good thought behind it. Let us all help to make our Diamond Jubilee, the 1942 meeting, a success for the general practitioner.

Service in Great Britain

A total of 230 applications, up to September 4, had been received by the American Red Cross from physicians wishing to enroll with the Royal Army Medical Corps in response to a British Red Cross request for American physicians, *The Journal of the American Medical Association* for September 13 reports.

"Of these," *The Journal* says, "138 had been found unqualified because of age, lack of citizenship or other similar reasons. Ninety-two have been qualified and forty-two have been given passports to Great Britain; the remaining fifty are in process."

General News

Council Meeting

The fall Council meeting of the West Virginia State Medical Association will be held on October 9, 1941 at the Association headquarters office, Atlas Building, Charleston, at 10:30 o'clock a. m. The councillors and officers who will attend are: Dr. Frank V. Langfitt, Clarksburg, chairman of the Council; Dr. Robert K. Buford, Charleston, president; Dr. R. O. Rogers, Bluefield, president-elect; Dr. M. H. Porterfield, Martinsburg, first vice president; Dr. D. G. Preston, Lewisburg, second vice president; Dr. T. M. Barber, treasurer, Charleston; Dr. Ray M. Bobbitt, Huntington; Dr. J. C. Peck, Moundsville; Dr. J. B. Clinton, Fairmont; Dr. C. Ben Pride, Morgantown; Dr. A. P. Butt, Elkins; Dr. L. W. Deeds, Buckhannon; Dr. C. O. Post, Clarksburg; Dr. Raymond Sloan, Huntington; Dr. James L. Wade, Parkersburg; Dr. George W. Easley, Williamson; Dr. Frank Holroyd, Bluefield; Dr. H. L. Goodman, Ronceverte; Dr. Andrew E. Amick, Charleston, and Mr. Joe Savage, executive secretary.

This is the first Council meeting since May 11, 1941, and a good attendance is expected. Luncheon will be served to the group at the Daniel Boone Hotel around one o'clock and the meeting will probably adjourn by mid-afternoon.

Joint Meeting at Beckley

Around sixty West Virginia doctors attended the September 17 meeting at Beckley, at which meeting the West Virginia Tuberculosis and Health Association convened with the doctors of the Sixth Councillor District of the State Medical Association. A golf tournament was held in the morning at the Black Knight Country Club and prizes were awarded to Doctors L. R. Lambert, Charleston; A. A. Wilson, Charleston, and W. P. Bittinger, Summerlee.

Luncheon was served at the country club to the doctors who had already assembled and the medical meeting was held at two o'clock at the same place. Speakers were Drs. David I. Salkin, Hopemont Sanitarium; George F. Evans, Clarksburg; G. G. Irwin and William L. Cooke, Charleston, and H. E. Kleinschmidt, New York. Dr. Evans could not be present and his paper was read by Dr. R. B.

Turnbull, a member of the staff of Pinecrest Sanitarium. Discussions were led by Drs. A. Robert Stork, Charleston; C. J. Reynolds, Bluefield; Harold Jones, Montgomery, and Walter E. Vest, Huntington.

In the evening, the assembled doctors were banquet guests of the officials of the Pinecrest Sanitarium, Beckley. Dr. K. M. Jarrell was master of ceremonies and introduced the distinguished guests.

The program closed in the late evening, after the medical guests had attended a portion of the meeting of the West Virginia Tuberculosis and Health Association, who also had a full day's program scheduled for September 18.

The following resolution adopted by the district meeting advocates compulsory hospitalization of open cases of tuberculosis and that the state tuberculosis patients be removed from political supervision and placed under the management of a non-political body such as the West Virginia Public Health Council:

"WHEREAS, The primary concern of the physician is the care of the public health; and

"WHEREAS, The physician by tradition and by education should have the responsibility for developing an intelligent correlation of all health problems; and

"WHEREAS, There exists a definite need to stimulate and sustain the morale of all groups working in the field of tuberculosis; and

"WHEREAS, The ravages of tuberculosis pervade the homes of many hundreds of our people each year; and

"WHEREAS, The proper control of tuberculosis depends on the early, adequate and continued isolation and treatment; and

"WHEREAS, The best scientific minds in the profession should be made available to the management of the tuberculous; and

"WHEREAS, The present system of management of the sanitoria is political in all the related activities; therefore,

"*Be It Resolved*, That the membership of the Sixth Councillor District propose to the appropriate government agencies that the medical supervision of the tuberculosis sanitoria be transferred to the West Virginia Public Health Council or some such non-political supervising body, with the physical management continuing under the present system of governmental control; and

"*Be It Further Resolved*, That the West Virginia Tuberculosis and Health Association be requested to direct a larger portion of its time and effort toward a program for procuring more sanitarium beds; and

"*Be It Further Resolved*, That tuberculosis be added to the list of contagious diseases such as diphtheria and smallpox, so that compulsory treatment may result, and

"*Be It Further Resolved*, That a similar resolution be presented to the West Virginia State Medical Association House of Delegates, at the next annual meeting."

Doctors Licensed

The Public Health Council of West Virginia met in July at Wheeling. The following is a report of those physicians who were granted licenses to practice medicine by reciprocity or by endorsement of credentials:

Dr. John M. Anderson, Gary, (Virginia); Dr. Glenn Ashworth, 1090 Charles Avenue, Morgantown, (Michigan); Dr. Curtis P. Artz, Grantsville, (Ohio); Dr. William P. Baker, 256 Fifth Avenue, Morgantown, (Virginia); Dr. George E. Berrian, Holden, (National Board Medical Examiners), deceased; Dr. Charles F. Dent, 320 Cobun Avenue, Morgantown, (Maryland); Dr. Robert S. Gatherum, Jr., Athens, (Virginia); Dr. Philip W. Keister, Raysal, (Maryland); Dr. Jules I. Klein, 349 Cobun Avenue, Morgantown, (Ohio); Dr. Edgar W. Mahan, Wheeling, (Pennsylvania); Dr. William D. McClung, Richwood, (Maryland); Dr. Lyle A. Moser, Minden, (National Board Medical Examiners); Dr. Lewis E. Nolan, Montgomery, (Minnesota); Dr. Robert A. Nutter, Enterprise, (Virginia); Dr. Morris H. O'Dell, 246 Kanawha Turnpike, South Charleston, (Virginia); Dr. David W. Palmer, Beech Glen, Rockledge Road, Wheeling, (Maryland); Dr. Earl M. Peck, Logan, (Virginia); Dr. James K. Pickens, Lawton, (Colorado); Dr. Reuben Rubisoff, Logan, (Illinois); Dr. Clark K. Sleeth, 529 Madison Avenue, Morgantown, (Michigan); Dr. Wilkin R. Stevens, Northfork, (Virginia); Dr. Walter E. Vest, Jr., Colorado General Hospital, Denver, Colorado, (Virginia); Dr. Joseph C. Wiggins, Huntington, (Tennessee); Dr. Lynwood D. Zinn, 219 Goff Building, Clarksburg, (Maryland).

The following physicians were granted licenses to practice medicine by examination:

Dr. J. Paul Aliff, Whitesville; Dr. Robert R. Bonar, 1006 Tomlinson Avenue, Moundsville; Dr. John Charles Condry, 2 Straughan Court, Charleston; Dr. Allen M. Dyer, Jr., Philippi; Dr. Richard K. Hanifan, Clarksburg; Dr. G. Eugene Hartle, Takoma Park, Md.; Dr. Cecil A. Jarrell, Charleston; Dr. Joe N. Jarrett, Summerlee; Dr. Stanley J. Klyza, 320 Kerens Avenue, Elkins; Dr. Maurice H. Maxwell, Elkins; Dr. Harold F. McCann, 137 Jackson Street, Clarksburg; Dr. Louis H. Nefflen, Elkins; Dr. Glenn F. Palmer, Charleston General Hospital, Charleston; Dr. Robert James Smith, Marlinton; Dr. Ruby Arden Smith, Route One, Princeton; Dr. James Earl Spargo, Jr., 136 N. 21st Street, Wheeling; Dr. Sarah Louise Cockrell Stevens, 1143 4th Avenue, Huntington; Dr. Lucien M. Strawn, 313 Simpson Street, Morgantown; Dr. Paul E. Vaughan, Charleston.

Van Meter Award

The American Association for the Study of Goiter again offers the Van Meter prize award of three hundred dollars and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The award will be made at the annual meeting of the association which will be held at Atlanta, Georgia, June 1, 2 and 3, providing essays of sufficient merit are presented in competition.

Industrial Health Conference

Under the auspices of the American Association of Industrial Physicians and Surgeons the American Conference on Industrial Health will hold its second annual meeting on November 5 and 6, 1941, at Chicago Towers, Chicago. This organization maintains a public forum for all who are interested in the prevention of disease, injury and disability in industry, and the active supervision and promotion of health in industrial groups.

The opening session will be a symposium on the technical problems of industrial health on the basis that health supervision in industry involves two great principles: (1) the adjustment of the working environment to the employee, and (2) the adjustment of the employee to the working environment, including also the human environment. The technical problems are the result of the application of these principles, and run the whole gamut of public health as applied to industry.

The afternoon session will be a symposium on the economics of industrial health, including: (1) organization and cost of a health service, and (2) discussion on the value of industrial health service to the employer, the employee and the public.

The morning of the second day will be given over to a symposium on the social implications of industrial health, discussing how far an industrial health service should go; are hospital and medical care plans related to industrial health service in any practical way; does legislation play a part in this problem; and the evaluation of labor turnover, spoilage, and lack of trained men, together with the experiences of management and the interests of insurance carriers in the medical and social problems presented.

The sessions will close with a schedule of plant medical department inspections, by special arrangements with local industries.

Roy B. Cook Honored

From the *West Virginia State Pharmaceutical Association Bulletin*, we learn that Roy Bird Cook of Charleston was nominated for the office of president of the American Pharmaceutical Association at its meeting held in Detroit, August 17 to 24. Two other candidates were also nominated for the office. Dr. Cook this year is serving as chairman of the Executive Committee of the National Boards of Pharmacy, having held all the elective offices of that organization.

At the same meeting Mr. Charles V. Selby of Clarksburg was reelected as secretary of The American College of Apothecaries.

Military Surgeons Meeting

The Association of Military Surgeons of the United States will meet October 29 to November 1 at the Brown Hotel, Louisville, Ky.

All members of the medical profession are invited to attend as guests and it is particularly hoped that as many members of the medical defense committees as possible will come.

For every member of the profession who can be present at this meeting there will be something of special interest.

The following is a tentative list of the speakers of the meeting:

Colonel Harold D. Corbusier, Medical Reserve, U. S. Army, "Presidential Address"; Rear Admiral Ross T. McIntire, surgeon general of the Navy; Dr. Warren F. Draper, assistant to the surgeon general, U. S. Public Health Service; Brigadier General Frank T. Hines, Administrator of Veterans' Affairs; Major Frank B. Makeman, Medical Corps, U. S. Army; Colonel Robert H. Duenner, Medical Corps, U. S. Army, Fort Knox, Ky.; Colonel Paul E. Howe, Sanitary Corps, U. S. Army; Colonel Fred H. Albee, Medical Reserve, U. S. Army; Captain Lucius W. Johnson, Medical Corps, U. S. Navy; Captain William L. Mann, Jr., Medical Corps, U. S. Navy.

Hospital Facilities

The survey of hospital bed facilities in the United States, released by the Census Bureau of the Department of Commerce, reveals that 1,282,785 beds were available in 9,614 institutions for the medical care of the American people in 1939.

The country's 6,991 hospitals and sanatoriums provided the great bulk of this care—355,145,063 patient-days, or the equivalent of one week-end stay in a hospital each year for every person in the United States. Infirmaries and nursing, convalescent, and rest homes provided the remainder.

Hospitals and sanatoriums had 1,186,262 beds —92 per cent of the nation's total. Census Bureau figures show that the average hospital had 169 beds and served 5,000 families.

Although only 594 hospitals—less than one in ten—were for nervous and mental patients, they had 602,850 beds or more than one-half of the total for all types of patient. They gave 208,466,000 patient-days of care.

The 5,912 general hospitals gave 122,467,000 patient-days of care, and the 485 tuberculosis hospitals 24,212,000 patient-days.

Approximately 77 per cent of the care rendered in 1939 was in state, local and federal government-controlled hospitals, 20 per cent in non-profit institutions and three per cent in proprietary institutions, the Census Bureau noted. The large proportion of care financed by taxes is due to government tuberculosis sanatoriums and government hospitals for mental patients.

Southeastern Surgical Meeting

The West Virginia Section of the Southeastern Surgical Congress met in Charleston on September 23, 1941. Dr. R. H. Walker, chairman; Dr. Robert King Buford and Dr. S. L. Bivens, of Charleston, were the committee in charge of the meeting.

The time from 8:00 a. m. until noon was devoted to surgical clinics at the Charleston General and Mountain State Memorial hospitals by the staff members. Drs. V. L. Vance and John B. Haley of Charleston held a clinic at the Mountain State Memorial Hospital at 9:00 a. m. with "Bronchoscopic Examination for Suspected Tumor of the Lung", "Dilation of Esophageal Stricture", and "Modified Suspension Laryngoscopy for Removal of Tumor of Vocal Cord."

At noon there was a luncheon at the Daniel Boone Hotel. From 1:30 until 4:30 p. m. there was a presentation of interesting case reports and roundtable discussion on appropriate surgical subjects. The program follows:

Dr. H. A. Bailey, "Pericardiotomy" and presentation of patients.

Drs. T. P. Mantz and J. E. Lutz, "Case Reports of a Series of Thoracoplasties."

Symposium on Large Bowel Tumors; Pathological Findings; presentation of patients by Drs. Putschar, Squires, Glass and Walker.

Dr. S. S. Hall, Clarksburg, "Mastoid Surgery", illustrated with lantern slides.

Drs. M. H. Porterfield, Martinsburg, and V. L. Lance, Charleston, case reports on "Carcinoma of the Lung."

Dr. E. B. Squires, Charleston, "Roentgenology in Biliary Diseases."

Dr. John O. Rankin, Wheeling, "Sulfathiazole in Surgery."

Dr. S. L. Bivens, Charleston, "Case Report of Unusual Kidney Tumor."

Dr. R. K. Buford, Charleston, "Thyroid Surgery." Presentation of patients.

The chairman reported the meeting was very successful, that all of the speakers were present, and that more than fifty West Virginia doctors attended.

Forum on Allergy

The fourth annual Forum on Allergy will be held in Detroit, Michigan, January 10 and 11, 1942. Program arrangements will be announced later.

County Society News

Cabell County

The regular meeting of the Cabell County Medical Society was held at the Hotel Prichard, Huntington, on Thursday, September 11, 1941, at 8:30 p. m. The guest speaker was Dr. Dean B. Cole, F. A. C. P., Associate Professor of Physical Diagnosis, Medical College of Virginia. He has had wide experience in medical and surgical treatment of tuberculosis and is widely known by virtue of his contributions to literature on this subject. His paper was entitled "Pneumothorax Treatment of Tuberculosis."

COLE D. GENGE, *Secretary*.

Harrison County

At a recent meeting of the Harrison County Medical Society, Dr. R. V. Lynch, president, appointed the following Committee on Medical Defense:

Dr. George F. Evans, chairman; Dr. S. S. Hall, Dr. C. O. Post and Dr. B. S. Brake, members.

L E. NEAL, *Secretary*.

Kanawha County

The regular monthly meeting of the Kanawha Medical Society was held on Tuesday, September 16 at 8:30 p. m. in the ballroom of the Daniel Boone Hotel. Preceding the meeting, there was a dinner at the hotel at 6:30 p. m.

The speaker for the evening was Dr. George P. Sturgis of Boston, Massachusetts, whose subject was "Heart Disease in Pregnancy." Dr. Sturgis has done considerable work in this field with Dr. Hamilton at the Boston Lying-in Hospital in the past several years. His talk was very interesting and contained many new aspects of this problem.

There was a good attendance at this first of our monthly meetings after a brief summer recess.

GEORGE P. HEFFNER, *Secretary*.

Logan County

The Logan County Medical Society held a special meeting at the Aracoma Hotel on Wednesday evening, August 20, at eight o'clock with Dr. J. W. Carney presiding. J. W. Beckett, Logan fire chief, gave a short discussion on the organization of "Civilian Defense."

Dr. B. D. Smith moved that the secretary be appointed to represent the medical society and to offer full cooperation to Chief Beckett.

The committee on medical fees presented the following recommendations:

That fees for physicians doing list or contract practice be made uniform throughout Logan county, and that such fees shall be set at a minimum of $1.50 per single man, and $2.50 per married man, per manth.

That 75 per cent of all increases above $1.00 per single and two dollars per married man per month, shall be paid to the physicians who do the work for the local which pays the money. This applies to physicians on salary and is in addition to their regular salaries.

This recommendation was approved and adopted by the society. Dr. Roberts moved that notices be sent to all local unions and operators that the fee increase would become effective September 1, 1941.

Dr. Frank R. Jamison of Dehue made application to transfer his membership from Wyoming county, and was accepted.

There were nineteen members and two guests present.

* * * *

The regular meeting was held on September 10 at the Aracoma Hotel, with Dr. W. H. Parker presiding.

Dr. C. F. McClintic, state health commissioner, was the guest speaker. He spoke on some of the principal phases of the state health department program. Dr. Albert M. Price of the state health department led a short discussion.

Dr. William A. Rose of Sharples was elected to membership in the Logan society, and the applications of Drs. Earl Peck, Logan; Robert Bonar, Holden; Reuben Rubisoff, Logan, Leon Nathanson, Earling, were read and referred to the board of censors.

Nineteen members and four guests were present.

W. P. HAMILTON, *Secretary*.

State News

Dr. F. A. Irmen, formerly with the State Hospital at Weston, is now located at Huntington and is a member of the staff of the Huntington State Hospital.

* * * *

Dr. R. N. Cooley of Coalwood is now located at Johns Hopkins Hospital, Baltimore, Md.

Dr. J. S. Hayman has returned to Huntington from Chicago, where he has been doing some postgraduate work.

* * * *

Dr. W. L. Claiborne has transferred his membership from McDowell to the Cabell County Medical Society and is located at the C. & O. Hospital, Huntington.

* * * *

Dr. H. H. Ritter of Montgomery has left for Baltimore where he will take a fellowship in pathology at Johns Hopkins.

* * * *

The address of Lt. Robert M. Sonneborn, MC, USNR, has been changed to U. S. Navy Mobile Base, Hospital No. 2, in care of Postmaster, New York, N. Y. His home address is Wheeling.

* * * *

Dr. J. C. Ford of Huntington is now located at Hattiesburg, Mississippi, with the U. S. Army.

* * * *

Dr. James L. Wade of Parkersburg has returned from active naval duty at Portsmouth, Virginia.

* * * *

Dr. O. L. Huffman, formerly of Sugar Grove, has moved to Arvonia, Virginia, where he is engaged in general practice. He was graduated from the University of Virginia in 1938.

Value of Sulfadiazine

Additional evidence that sulfadiazine, a new derivative of sulfanilamide, may be considered the drug of choice in the treatment of pneumococcic pneumonia is presented in *The Journal of the American Medical Association* for September 6 by Harry F. Dowling, M.D.; Clarence R. Hartman, M.D.; Samuel J. Sugar, M.D., and Harry A. Feldman, M.D., Washington, D. C.

Their belief that sulfadiazine is preferable to two other sulfanilamide derivatives, sulfathiazole and sulfapyridine, is based on a study of 137 patients treated with sulfadiazine. Among 115 of the patients whose type of pneumococcic pneumonia was known, there were 13 deaths (11.3 per cent). This approximates the death rates recently reported by other investigators.

Reactions to the drug were infrequent and treatment effects more definite than those usually following treatment with sulfathiazole and sulfapyridine.

BOOK REVIEWS

The Care of the Aged

THE CARE OF THE AGED, (Geriatrics). Malford W. Thewlis, M. D., Attending Specialist, General Medicine, United States Public Health Hospitals, New York City; Attending Physician, South County Hospital, Wakefield, Rhode Island; Special Consultant, Rhode Island Department of Public Health. Cloth. Pp. 579 with 50 illustrations. Third edition, entirely rewritten. St. Louis. C. V. Mosby Company, 1941.

This reviewer remembers reading Nascher's book on geriatrics in 1914. One thought derived from that book a quarter of a century ago has been of constant assistance in dealing with the aged patient. In this volume, Thewlis approaches the subject from the standpoint that the aged patient represents a conglomeration of organs which can never be returned to their pristine vigor but have undergone changes that are normal for the age of the patient and that such organs deserve special consideration and treatment when they depart from their own normal state. It is possible that this concept may be of value to the young reader of today.

The book is divided into five sections. The first section is devoted to general considerations that might be considered filling and padding but somehow achieves the purpose of setting up a foundation for the rest of the work. The second section deals with the various anatomic and physiologic changes of old age. It discusses treatment, nursing, the feeding and the sex life of these patients. The important part of the book is section five which deals with the pathologic condition of old age, taking up in order, the cardiovascular, respiratory, genitourinary and other systems. The final chapter in this section deals with surgery in the aged.

The book represents an honest effort to present the problem of the aged patient and is to be commended from that standpoint. The author has consulted numerous authorities and gives very adequate references at the end of each chapter.

Complete Weight Reducer

COMPLETE WEIGHT REDUCER. C. J. Gerling, M. D., New York. Cloth. Pp. 246. Price $3.00. New York. Harvest House, 1941.

This book would seem to be the last word on the subject of weight reducing. It presents the list of the multitudinous quackeries fostered upon an unsuspecting weight conscious public. Bath salts and soaps, reducing pastes and lotions, reducing teas and chewing gum, pills, powders and liquids, the mechanical gadgets from massage to vibrators, and

from reducing garments to sweating cabinets, all are here. In addition, there are sensible systems of diets and obesity charts and tables. This book can be commended to the doctor whose clientele represents many who desire to eat, do nothing and stay slim.

Poliomyelitis Findings

"This year the United States has been visited by infantile paralysis of unusually wide dissemination and severity," *Hygeia* declares in an editorial in its October issue. "The opening of many schools in Pennsylvania was postponed on account of the spread of the disease. Up to the first of September, 18 deaths had been reported and more than 250 cases had occurred in the eleven eastern and central counties in the state. More than 60 cases had occurred in Passaic and Bergen counties in New Jersey. There had also been an extensive incidence of infantile paralysis around Winnipeg, in northern Florida, Alabama, Georgia and Tennessee. Fortunately, the disease had not spread to any extent among the soldiers in our camps.

"Progress is being made steadily in adding to our knowledge of infantile paralysis. One of the most fascinating pieces of information was developed recently at the Johns Hopkins University Hospital, when Drs. David Bodian and H. A. Howe showed that the virus, or infectious agent, responsible for this disease, once reaching a nerve, will travel along that nerve at the rate of about 2.4 millimeters an hour. Two and four-tenths millimeters represents about 0.094 inch. Other research carried out in the same institution, supported incidentally by a grant from the Commonwealth Fund, indicated that the virus attacks various cells and various portions of the nervous system, sometimes indeed skipping enough cells so that paralysis does not occur. This accounts for the cases of infantile paralysis with fever and general illness but without paralysis. If, however, enough of the motor nerve cells are attacked by the virus in a certain area, the muscles concerned may lose their function. The investigators were able to prove also that it is quite possible for this virus to attack the brain and not at the same time the spinal cord.

"Perhaps out of these studies may come means of control which will lead ultimately to elimination of the disease as a threat to mankind, exactly as typhoid has been largely eliminated."

Medical Preparedness

Civilian Defense

The first of a series of pamphlets outlining medical provisions for civilian defense, designed for the organization of emergency medical field units, entitled "Emergency Medical Service for Civilian Defense" Bulletin No. 1, was issued August 27 by the office of civilian defense.

The bulletin outlines in considerable detail a basic plan for the organization and expansion of hospital facilities along both seaboards and in industrial areas in the interior. It also outlines plans for the rapid expansion of nursing facilities through intensive training of adequate numbers of volunteer nurses' aides and other nursing auxiliaries.

The pamphlet describes the changed technique of warfare predicated upon the bombing of civilians as necessitating preparation for providing medical service to casualties through establishment of medical field units. It declares the organization of such facilities must be a fundamental part of the civilian defense program.

After outlining, in diagram form, the structure of emergency medical service, the pamphlet thereupon describes in detail the basic organization plan under the following topical subheadings:

1. Local chief of emergency medical service (responsible for coordinating all local emergency medical facilities).
2. Local medical advisory council on civilian defense (includes representation from the health department, hospital field, local Red Cross chapter, and municipal and volunteer agencies).
3. Emergency medical field units.

Under each subheading the functions of the several divisions are described in detail.

The pamphlet prescribes the personnel of the emergency field unit, divided into squads on call for each 12 hour shift, including physicians, nurses and nursing auxiliaries.

The squads are designed for communities varying in population from 25,000, 50,000 and 100,000.

Under the heading, "Casualty Stations and First Aid Posts", the bulletin describes the operation of these emergency medical field units as follows: They respond promptly to the call of the control center and are dispatched from the nearest hospitals in ambulances or other vehicles. They establish

casualty stations at certain predetermined sites in the vicinity of the disaster. For this purpose, the chief of emergency medical service will provide a spot map of the community on which is recorded the available sites for casualty stations. From such casualty stations, teams of one or more physicians, nurses and auxiliaries may be split off for the purpose of establishing one or more subsidiary first aid posts at other favorable sites.

"Rescue squads" and "stretcher teams" bring the injured out of the danger zone and conduct or transport them on stretchers to the casualty stations and first aid posts. The bulletin emphasizes the necessity for field drills of these units at least one each month.

Under the heading "Base and Evacuation or Clearance Hospitals" the bulletin outlines an inventory to be made by the chief of emergency medical service of hospitals, convalescent homes and other institutions within a radius of 50 or more miles of each locality. These may be required in the event of an emergency so as to release hospital beds within the city. The first to be evacuated at times of crisis to a more distant, protected site would be the maternity and children's services and certain categories of the hospitalized sick. The injured would be evacuated as soon as possible to base hospitals situated outside of the metropolitan area.

Under "Augmentation of Nursing Services" provision is made for the training of 100,000 volunteer nurses' aides, in collaboration with the American National Red Cross, and for the training of greater numbers of registered nurses and nursing auxiliaries, in collaboration with the Federal Security Agency.

Under the subheading "Transportation", the pamphlet describes essential means of transporting casualties in stationwagons, trucks, ambulances, passenger vehicles and also describes special racks which can be installed in ambulances, stationwagons and small trucks to permit transportation of four or more stretcher patients at one time.

The pamphlet concludes with a description of first aid courses which have been revised by the office of civilian defense in collaboration with the American National Red Cross. The pamphlet declares it is the purpose of this program to provide first aid instruction at first for five per cent of the personnel of every factory, business establishment and governmental department, who should comprise the "first aid corps" of their organization. From this group, instruction should spread to all other employees and into every home in the United States.

Association headquarters has mailed a copy of this bulletin entitled "Emergency Medical Service for Civilian Defense" to each county society secretary. There is still a supply on hand which will be sent out on request to hospital staffs and other interested persons.

Rehabilitation for Registrants

Approval of plans to facilitate the rehabilitation of selective service registrants who fail to qualify for military service because of remediable physical defects has been announced by national selective service headquarters. Arrangements for cooperating by giving data concerning such registrants to authorized agencies have been under study at national headquarters for several months and now are virtually completed, it was stated.

The program was initiated following findings of a high rate of rejections of registrants for remediable physical defects. Conferences with other government agencies and representatives of the medical profession looking to the formulation of a rehabilitation program were inaugurated early this year.

British Psychiatrist

One of England's foremost specialists in psychiatry and neurology has been granted a leave of absence from the RAF by the British government to report to the American medical profession his first-hand observations on the psychological effects of "blitz" warfare on armed forces and civilian population.

Dr. R. D. Gillespie, who is now chief psychiatrist for the British Royal Air Force, is coming to this country at the request of the Salmon Committee on Psychiatry and Mental Hygiene of the New York Academy of Medicine. He will deliver the Salmon Memorial Lecture in the New York Academy Building, November 17, 18 and 19, speaking on "Psychoneuroses From the Standpoint of War Experience."

The New York lectures will be followed by addresses before the Chicago Neurological Society, the Chicago Institute of Medicine and the Illinois Psychiatric Society in Chicago. Dates for these lectures as well as lectures in Toronto, Ontario and San Francisco, California, will be announced later.

Dr. Gillespie's observations made under actual

war conditions are expected to be of inestimable value to American psychiatrists in formulating plans for maintaining civilian morale in wartime. His lectures will also give his hearers new information concerning the pressing psychiatric problem of today—the psychoneuroses.

Dr. Gillespie is the author of two medical volumes "Disorders in Sleep" and "Textbook of Psychiatry", a reference work in collaboration with Dr. D. K. Henderson of Edinburgh, Scotland, who is a former Salmon lecturer. Before he undertook his wartime duties as chief psychiatrist for the RAF, Dr. Gillespie was the lecturer in psychological medicine at Guys Hospital and Medical School in London.

Among Dr. Gillespie's many important findings concerning the psychological effects of modern warfare on civilians and combatants is the fact that chronically neurotic people and those suffering from mild depressions have become chronically heroic and self-sacrificing under the stress of bombing raids. Also, he has noted that women stand up as well if not possibly better than men under civilian bombings.

Medical Education and National Defense

Medical education activities in relationship to national defense are among the highlights of the forty-first annual presentation of educational data by the Council on Medical Education and Hospitals of the American Medical Association, published in *The Journal* of the Association for August 30.

Regarding defense activities, the report says: "Leaders in education acknowledge the paramount importance of national defense. National defense, however, includes not only military preparedness but also the preservation and development of all institutions necessary for the safety and welfare of the people. An effective program of national defense, therefore, demands that educational institutions which provide a continuous supply of men skilled in professions, notably in medicine, be maintained unimpaired. To this end the Council on Medical Education and Hospitals has been frequently in conference with the medical services of the army and navy. Through its Committee on Medical Preparedness, the American Medical Association has rendered and continues to render every possible assistance.

"The faculties of medical schools have been classified with respect to availability for medical service in national defense. An alphabetical list of essential faculty members was supplied the Surgeon General of the United States and the commanding officer of each corps area in the fall of 1940 and was subsequently revised as occasion required."

The report points out that formal action by the Council on the question of increasing the enrollment of medical students or accelerating the output of graduates of medical schools has not been taken because of the absence of any definite information from the War Department as to the necessity for such moves. However, forty-four medical schools have increased the enrollment of the 1941 entering class by a total of 329 students. Eleven schools have made it possible for students to anticipate, during the current summer, a part of the required work of the fourth year and in three of these schools the program is required. Classes will be graduated in February or March by eight schools. Three schools will allow seniors to finish their work two months earlier and begin their interneship or other work at that time, but they will graduate with the regular class in June.

"The medical curriculum has not thus far been curtailed," the report says, "although the total time involved has been shortened by cutting down vacations. Additional courses in military medicine are being offered. The medical schools, apparently, are able to proceed without extensive revision of the curriculum and without shortening the period of residence. An accelerated program is not possible in many institutions for various reasons, including the fact that their teaching forces have been reduced for military reasons. Others would consider such a program if completion of the course could be integrated with hospital internships. The financial aspect is an important consideration both for students and for schools. * * *

"It would appear that every effort is being made by medical educators to cooperate in the national emergency while at the same time endeavoring to insure that the education of physicians is continued at the present level and without interruption. It should not be necessary to argue that a continuing and undiminished supply of well trained physicians is absolutely essential to the welfare of the nation. We cannot speed up that training beyond a certain point without lowering educational standards and degrading the quality of medical service. The present crisis demands, in fact, better qualified physicians if we are to face the future with reason-

able confidence. Those who represent the medical schools are making every effort to preserve their institutions and to maintain, unimpaired, their priceless contribution to the health and welfare of the nation."

Medical Students' Deferment

"The health of the people is essential in any program of national defense," *The Journal of the American Medical Association* for August 30 says. "Its maintenance requires the services of competent physicians adequate in number. Major Gen. James C. Magee, surgeon general of the United States Army, elsewhere in this issue (of *The Journal*) notes that the War Department has authorized the issuance of commissions in the Medical Administrative Corps to junior and senior medical students in good standing in recognized medical schools. Those who apply for and receive these commissions will be excluded from the operation of the Selective Service Law of 1940. Nothing, however, has been done to insure that all well qualified first and second year students, and those who have already been accepted for freshman classes starting this fall, will be permitted to pursue their medical studies without interruption. Brig. Gen. Lewis B. Hershey, director of Selective Service, it is true, has declared that there are no replacements for medical students and that they should therefore be regarded as in training for necessary vocations, but local boards have not always followed his advice. If the medical needs of the country are to be met, the training of physicians must not be curtailed. Some means must be found whereby all bona fide medical students and those accepted for enrollment this fall shall be continued in training so that they may ultimately join the ranks of the medical profession."

Why Babies Smile

There is no evidence to indicate that the smiles of very small babies are caused by conscious thinking, *Hygeia* states in a recent issue in answer to an inquory.

"Observation with a movie camera has recorded that young infants often smile in their sleep," *Hygeia* continues, "but seldom when they are awake unless the skin around the zone near the mouth is gently stroked. The smile seen on the baby during sleep is thought to be of reflex origin, an unconscious act of which the baby may be entirely unaware."

Woman's Auxiliary

Executive Board Meeting

The executive board of the Auxiliary to the West Virginia State Medical Association will hold its annual fall board meeting at the Chancellor Hotel in Parkersburg on Wednesday, October 8, 1941. The business session will begin promptly at 10 o'clock.

At one o'clock in the ballroom of the Chancellor Hotel there will be a luncheon, sponsored by the Auxiliary to the Parkersburg Academy, to which all Auxiliary members are invited. The tickets are one dollar.

The National President Mrs. R. E. Mosiman of Seattle, Washington, will be the principal speaker.

Reservations should be made promptly with Mrs. Andrew C. Woofter, 1705 23rd Street, Parkersburg.

Truth About Alleged Vaccine

"Recently newspapers and magazines have featured pictures of riots in the Argentine and in Ecuador among patients suffering with tuberculosis who, it seems, were demanding of the government the right to be inoculated with a new vaccine supposed to be useful in the treatment of this disease," *The Journal of the American Medical Association* for September 6 says. "The vaccine was apparently developed by one Jesus Pueyo, who was a laboratory bacteriologic assistant in the Medical School of Buenos Aires. The first announcement of his alleged discovery appeared in the newspapers of that city. Incidentally, he had previously announced a similar vaccine for leprosy. Because of the method of presentation of this discovery, scientific physicians were inclined to discount it completely; indeed the medical authorities simply refused to make tests of the product. Later the minister in charge of these matters in the Argentine invited Mr. Pueyo to demonstrate his preparation in the state laboratories.

"The results of this scientific attempt were wholly negative, and the minister forbade the use of the vaccine in the Argentine. In Uruguay it is reported that the minister of health is about to promulgate a similar resolution, and in Chile the director of public health has ordered that a study of this product be made, limited exclusively to animals."

COMMUNICATIONS

President,
Kanawha County Medical Association,
Charleston, West Virginia.
Dear Sir:

Would you be interested in sure cure for heart dropsy. I recently discovered sure and reliable cure for heart dropsy. I cured Lady who was confined over two years. Was tapped 27 times her legs bursted in two different places. I can produce this lady also sworn statements.

Please don't turn deaf ear to this statement. You can save lives at small cost one pint of my remedy cured this lady. I will sell you rights in West Va. or sell formula to you outright. I have offers from New York, Ohio, Tennessee, also Virginia.

Thanks for reply.

James A. Kerr,
419 Lackey Ave., Louisa, Ky.

During the month of July, 1941, 56 nursery schools were conducted in West Virginia; total attendance, 1,367.

Neighbor Journals

Alcoholics Anonymous

The unusual organization known as Alcoholics Anonymous is what its name implies and is made up of former alcoholics whose membership is not made public. The organization has no officers and no dues and its sole purpose is rescuing unfortunate alcoholics from their deplorable condition.

The majority of human beings can take one drink and stop there. A small percentage of individuals, but by no means a negligible number throughout the length and breadth of our country cannot drink in moderation and make up the group known as alcoholics, dypsomaniacs or just plain "drunks." These people keep deluding themselves with the idea that they can drink in moderation, and they become a problem to themselves as well as to their relatives and friends. They periodically have an inexplicable and irresistible craving for a drink and they are off on a bout. Alcohol may have a different effect on these individuals than on the rank and file, but the psychic element plays an

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MEDICINE—Two Weeks Intensive Course in Internal Medicine and Two Weeks Course in Gastro-Enterology will be offered twice during the year 1942, dates to be announced. One Month Course in Electrocardiography and Heart Disease every month, except December.

FRACTURES & TRAUMATIC SURGERY—Two Weeks Intensive Course will be offered four times during the year 1942, dates to be announced. Informal Course available every week.

GYNECOLOGY—Two Weeks Intensive Course will be offered four times during the year 1942, dates to be announced. Twenty Hour Personal Course in Vaginal Approach to Pelvic Surgery November 3rd. Clinical and Diagnostic Courses every week.

OBSTETRICS—Two Weeks Intensive Course will be offered twice during the year 1942, dates to be announced. Informal Course every week.

OTOLARYNGOLOGY—Two Weeks Intensive Course will be offered twice during the year 1942, dates to be announced. Clinical and Special Courses starting every week.

OPHTHALMOLOGY—Two Weeks Intensive Course will be offered twice during the year 1942, dates to be announced. Informal Course every week.

ROENTGENOLOGY—Courses in X-ray Interpretation. Fluoroscopy. Deep X-ray Therapy every week.

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important rôle. It is claimed that many of them seek escape from unpleasant reality in the numbing effect of alcohol.

The alcoholic has always been a problem and doubtless always will. Various methods of treatment have been applied—legal, medical, psychic and religious. By and large, the results have not been very satisfactory.

Alcoholics Anonymous takes a somewhat different approach to this important and difficult problem. Doctors have realized that medicine can do nothing permanently for these unfortunates unless the individual wants to cease drinking. He must not only want to stop for the time being but he must be convinced that he cannot drink in moderation and must admit that total abstinence is the only answer to his problem. Alcoholics Anonymous realizes this fact but adds to it the helping hand of a group who have known the difficulties from personal experience.

The organization was started in 1934 in Akron, Ohio, by a local physician and a New York broker, both alcoholics, who conceived the idea of helping others. The organization has spread all over the country, having various sized groups in many of the larger cities.

The psychology associated with Alcoholics Anonymous is interesting. In the first place the down-and-outer must admit that he cannot fight alcohol alone and must seek assistance. The physician may be needed in an individual case to supervise a period of sobering up before cerebration is reestablished. Then, if he so desires, a note dispatched to P. O. Box 3452, Saint Paul, or 594, Minneapolis, will bring two or three members of the organization to call on him and reach a helping hand. If he means business he will be called on frequently and may attend group meetings, where he feels the psychic strength incident to the group. One or two episodes of backsliding may be tolerated, but he is dropped from membership in case of repeated offenses, for one of the purposes of the society is the acquiring of new members and assisting another alcoholic gives added strength to the members.

Alcoholics Anonymous is so obviously what it pre-

For the local Treatment of Acute Anterior Urethritis
(DUE TO NEISSERIA GONORRHEAE)

SILVER PICRATE*
Wyeth

Silver Picrate, Wyeth, has a convincing record of effectiveness as a local treatment for acute anterior urethritis caused by Neisseria gonorrheae.[1] An aqueous solution (0.5 percent) of silver picrate or water-soluble jelly (0.5 percent) are employed in the treatment.

1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph., Gon. & Ven. Dis., 23, 201 (March), 1939.

A complete technique of treatment and literature will be sent upon request

*Silver Picrate is a definite crystalline compound of silver and picric acid. It is available in the form of crystals and soluble trituration for the preparation of solutions, suppositories, water-soluble jelly, and powder for vaginal insufflation.

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O. B. DARDEN, M. D.
E. H. ALDERMAN, M. D.
E. H. WILLIAMS, M. D.
REX BLANKINSHIP, M. D.

• The sanatorium is a private institution with 135 beds, located in the Ginter Park Suburb on the Richmond-Washington National automobile highway. Midway between the North and the distant South, the climate of this portion of Virginia is almost ideal. Nearby are many reminders of the Civil War, and many places of historic interest are within easy walking distance.

• *The plant consists of fourteen separate buildings, most of which are new, located in the midst of a beautifully shaded lawn, surrounded by a 125-acre tract of land. Remoteness from any neighbor assures absolute quietness.*

• The large number of detached buildings makes easy, satisfactory and congenial groupings of patients. Separate buildings are provided for men and women. Rooms may be had single or *en suite* with or without private bath. A few cottages are designed for individual patients.

• *The buildings are lighted by electricity, heated by hot water, and are well equipped with baths.*

• The scope of the work of the sanatorium is limited to the diagnosis and treatment of nervous and mental disorders, alcoholic and drug habituation. Every helpful facility is provided for these purposes, and the institution is well equipped to care for such patients. It affords an ideal place for rest and upbuilding under medical supervision. Six physicians reside at the sanatorium and devote their entire attention to the patients. A school for trained attendants is an important part of the institution in providing especially equipped nurses—both men and women—for the care of the patients.

• *Sustematized out-of-door employment constitutes an important feature of the treatment. Wonderful work in the arts and crafts is carried on under a trained teacher. There are bowling, tennis, croquet, billiards and pool.*

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tends to be, is so free from monetary consideration, being supported by occasional gifts and the sale of a book by the Alcoholic Foundation, and gives such opportunity for the spiritual, religious, and economic rehabilitation of these unfortunates, that the medical profession should know more about the organization and cooperate whenever possible. Literature in the form of a pamphlet and a book entitled "Alcoholics Anonymous" are obtainable from The Alcoholic Foundation, P. O. Box 658, Church Street, New York City.—*Minnesota Medicine.*

America Organizes Medicine

I have just finished reading a book by Dr. Michael Davis entitled "America Organizes Medicine." This book reviews much of the material published on the need for medical care; the supply and the quality of the supply and the variations of demands and supply in various sections of the country; the incomes of doctors and dentists; the income of specialists; the expenses of doctors and dentists; the distribution of hospital accommodations; the cost for hospital accommodations; group hospitals and so forth.

Like most writers, medical expense and medical care is treated as though it were a separate and distinctive economic item away from, and apart from all other economic problems of the people. This has always seemed to me to be an erroneous method of approach because medical care is just one part of the actual necessities of life which all people must have. It cannot be cited as being particularly different from food, shelter, clothing and so forth. Dr. Davies assumes that it is a different type of necessity and sets forth that even though the earning capacity of a large number of the low income group was increased that this would not meet the problem. And it seems to be quite definite that he assumes the only solution of the problem is some form of socialized medicine under federal and state control.

Medicine has made tremendous progress without being controlled by the federal or state government. The health of our people has been maintained even during the most trying times. It is not perfect, and it will not reach perfection in any given period of time because advancement should be perpetual. The assertions made that the medical profession are unmindful of the problems that confront them cannot be substantiated. Various surveys have been

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made by various medical organizations, including one recently made by the American Medical Association. These surveys were made to determine as near as possible the problem of medical needs and the available source of supply for such needs in the entire field of medicine. A report of these surveys is at variants with surveys that have been made by some foundations and some social and reform workers. Furthermore, various groups, county medical societies and state societies have been carrying on various experiments in an effort to determine what is the most applicable way of meeting these problems. They have not jumped at the conclusion that they have the right solution, but believing that all new programs must be proven by experiment before they are finally accepted; they have approached the problem in a constructive way, we might say in a scientific way. We hope in the next few months to present in more detail in this column some of these various experiments which furnish actual data on the results obtained. This will give us a better idea of our approach to our own problems.—Dr. R. K. Packard, in *Illinois Medical Journal.*

Guerrilla Hospitals in China

A $5,000 shipment of drugs, medical supplies and surgical instruments to support guerrilla hospitals in China has been made by the China Aid Council, member agency of United China Relief.

Twenty guerrilla hospitals, functioning in the area defended by the Fourth Route Army, are spread out in huts and villages throughout the countryside to escape detection and possible bombardment. Hospital doctors, traveling on foot, horseback and ricksha, sometimes take an entire day to complete their round of patients in these novel hospital "wards."

More than 5,000 wounded and 10,000 sick casualties—tuberculosis, trachoma and scabies are particularly prevalent in the region—are being treated in the hospitals under the most primitive conditions, the report said, appealing for medical assistance from abroad. Operations, it said, must be performed in daytime, or if at night, with the use of simple hand torches. Instruments are made of wood, bamboo and other crude materials prepared in the army's workshops because of a lack of all metals. Patients must lie on straw mats spread

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on the ground, each bed being marked with stones in the primitive huts.

Despite local difficulties, simple medical training courses are conducted daily to cope with the acute shortage of trained personnel. More than 400 assistants have been graduated into the Army medical service in the past year.

Among the medical supplies sent to aid these guerrilla hospitals were a Spencer rotary microtome with knife, microscopes, a Minot automatic microtome, a freezing microtome with freezing attachment, an x-ray machine with generator and full equipment, surgical instruments and especially forceps, knives, scissors, amputation instruments, drugs and medicines of all kinds. The shipment was made to Hongkong.

Rules For a Doctor's Office Nurse

In the September issue of the Michigan State Medical Society's *Journal*, appears an interesting and instructive article by Miss Marjorie Euler of Topeka, Kansas on "The Highlights of Twenty-five Years of Service." It is an intelligent and thoughtful survey of the rules of behavior for a doctor's assistant or his secretary and office nurse.

Miss Euler says that a girl who works for a doctor today "is required to take medical dictation, write case and operative histories, keep accurate files, handle the doctor's correspondence, as well as to act as hostess, nurse, mother, entertainer, telephone operator, bookkeeper, collector, treasurer, income tax computer, and housekeeper."

In regard to personal appearance, she says, "You

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should be neat and well groomed at all times; uniform and shoes kept spotless; makeup—yes, we should be as attractive as possible since we are the first glimpse that the public gets of the office—well manicured nails, preferably a light or natural shade of polish." She points out that one should always be five minutes early at the office, so that the doctor will never be annoyed by having a patient call him at home saying, "I called your office but no one answered."

Under Office Housekeeping: "We must dust first as everything around a doctor's office should be kept as spotless as soap, water and furniture polish can make it; magazines arranged neatly on tables, one at each end of the room if possible, so that patients will not have to reach across each other to get a magazine, as this is always annoying especially if you do not feel well. Do by all means keep the magazines up to date. I think two of the so-called woman's magazines are nice, also a fashion magazine, as there is not a woman living, young or old, who is not interested in fashions. Then for those who have only a few minutes to wait, picture magazines; *Hygeia* will always have a big following."

Miss Euler seems to have a real grasp on the psychology of handling patients. She suggests, "Before the patients start coming in I find it helps to have a list of your appointments on your desk as well as the doctor's. Look these over until you are quite familiar with them, as nothing pleases a patient more than being addressed by his own name as he enters. If he is a new patient be very careful about getting name (spelled correctly), address and telephone number. If married get husband's initials and his place of employment; if a minor child, get father's initials. Do not leave this job up to your doctor as he is often too busy or else he knows the patient well enough that he hesitates asking for the rest of the information needed to keep good records.

"Usher patients in as near appointments as possible, trying not to show any fuss or rush, regardless of how many are waiting. * * * A pleasant smile and ready welcome is a receptionist's best weapon in handling any patient. Learn to handle them she must, and each one differently. If your doctor is late getting in for his first appointment, even though you know he is lunching with his best corny, telling about the big one that got away * * * above all things do not let your patient be aware of

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the fact that he is taking a few minutes to relax. My pet expression is, 'Doctor has had an extra busy morning at the hospital', or 'We have had an emergency and doctor is going to be a little late.' You'll find if you ask your patients to help you, they will cooperate nicely."

The office assistant is advised to "be nice to the medical book publishers, instrument salesmen and detail men, as the doctor will want to see them, if he is not too busy, as he likes to hear about what is new on the market. They will appreciate your cooperation. In contrast to this we have the necktie and hosiery salesmen, real estate men and peddlers of all sorts. These you should never let get to your doctor, his time is much too valuable to waste on them, nor must you spend any time with them."

In warning against unethical talking, it is pointed out that every office nurse should realize that she is not a diagnostician, and that beyond being courteous she has no business discussing, even with a patient, his problem which the medical expert alone must solve. * * * "In casual conversation if you do talk about your doctor, give him a boost, say something about his skill and ability, or tell them of some of the charity work he does (never mention names) so that your listeners will know what a competent man he is."

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should be both polite and diplomatic when talking to patients or prospective patients on the telephone.

Health Insurance

It is interesting to observe the changing tone manifested by popular articles on the subject of health insurance.

Only a few years ago, enthusiasm of the advocates ran at white heat, especially in the literary periodicals. Hopeful reformers fell upon the insurance principle for distribution of costs for medical service as upon a revelation. They admitted no dangers, saw no short-comings. Physicians were distressed and bewildered chiefly because of the ignorance of medicine and human nature which were so naively displayed.

The article called "But Health Insurance Is Different," by Dr. Nathan Sinai which appears in the current *Harpers* shows, however, that discussion of the question has progressed a great way toward a more mature and realistic understanding of the problems involved.

Dr. Sinai has long been interested in the insurance method of payment for medical expense. It was he who, with Dr. Harry Luce of Michigan, evolved the first health insurance plan, forerunner of the present Michigan Medical Service, which was considered and shelved in 1934 by the Michigan State Medical Society. Dr. Sinai served before that on the Committee of Costs of Medical Care which reported in 1932 and, though he continues as professor of hygiene and public health at the University of Michigan, he has, by his own confession, made medical economics his main interest in life.

It is clear that Dr. Sinai and the early enthusiasts no longer expect health insurance to end all of the problems of the sick nor to translate the American doctor and patient promptly and painlessly into a fee-less medical Utopia. Careful studies by medical organizations, and latterly by actuarial experts, plus a considerable body of experience, have modified early enthusiasms and restricted early hopes. For that change of attitude physicians and the social planners, as well, owe a debt of gratitude to organized medicine which insisted vigorously upon looking before it leaped.

Like many other state medical organizations, the Minnesota State Medical Association is continuously studying the question and observing plans

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already in operation under medical sponsorship in many parts of the country. Unlike many of them, its Committee on Sickness Insurance has not yet proposed any insurance plan for Minnesota and may never do so. It will undoubtedly base its policy upon experience and results elsewhere, omitting costly trial and error experiments here.

Those who read the exhaustive actuarial study by Mr. Wendell Milliman, published recently in these columns, will applaud that course. They will be interested, too, in reading the Sinai article and in noting that Dr. Sinai's recommendations for 1941 have unmistakably been influenced by such studies. His assumption that "the battle for health insurance is over" seems a little premature; but he plots a far more cautious course, nevertheless, than his predecessors in the lists and displays a healthy recognition of some of the pitfalls involved.

As a first step in his program, Dr. Sinai suggests inclusion of hospitalization and physicians' services for surgical and obstetrical cases only. The importance of medical cases is granted, he says; but until there are better methods of control, the inclusion of this class of patients is a threat to solvency.

As a second step—"after enough time has gone by to permit those who are running the plan to acquire administrative experience and to correct defects of organization"—he feels that the health insurance should embody services to general practitioners in offices and homes.

Home and office care is emphasized, he says, for

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its preventive value in early diagnosis and treatment. To this he suggests adding a much more extensive use of the visiting nurse as an aid to the doctor, as a means of public education and to reduce hospitalization costs.

His medical insurance program would then cover the surgeon, the obstetrician, the general practitioner and the visiting nurse, together with the hospitals for surgical and maternity cases.

"These," he says, "constitute a clean cut program for medical care that may be covered by health insurance with reasonable safety. More is necessary but much more needs to be known before all of the other special services outside and inside the hospital can be added."

Just how the necessary administrative controls are to be applied in his program is not even touched upon. Nor does he tackle the matter of premium charges to the subscriber, a rock upon which several programs are already beginning to flounder, since a premium sufficient for adequate medical service is proving more difficult than many planners had anticipated to sell.

Dr. Sinai's conclusions are interesting, however. "No such modest program will satisfy those who visualize sweeping changes in the present form of medical service as well as in the method of payment," he says. "No one can say what will be the pattern of practice twenty-five or fifty years hence. The present system may be wholly right, partially right, partially wrong or wholly wrong, but nevertheless, it exists. Rightly or wrongly the great majority of physicians are averse to becoming salaried employees and they insist that their compensation shall be in the form of fees for the services they render. As already stated, there is an important place for experimental plans, for laboratories where different methods of practice and of payment may be tried out and analyzed. Under laboratory conditions one may easily correct an error which might prove disastrous if it were made in a system with millions of subscribers and thousands of physicians.

"Health insurance is in motion and behind it there is a dynamic power that has its source in the increasing public demand for relief from the economic hazard of sickness. There are those who, living in their little world of absolutes, regard the word 'change' as a synonym for 'calamity.' There are others who see in the demand the possibility of

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"The answer to the question of why intelligent, well educated people misplace words would involve a long philosophic discussion of what are considered in the Freudian literature as 'slips of the tongue,'" *Hygeia, The Health Magazine* states in a recent issue in answer to an inquiry as to whether such "slips" are a remote sign of insanity. "There are many different types of slips," *Hygeia* says, "some having rather obvious meanings, while others are obscure and little understood. Such 'slips' or the misplacement of words are common and bear no established relation to mental disease."

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Officials emphasized that no change has been made in the size of the package, price, or formulæ and that each of the five different types of the product will carry the new spelling "petrogalar." The new corporate name is: Petrogalar Laboratories, Inc., and the address remains, 8134 McCormick Boulevard, Chicago, Illinois.

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SUDDEN DEATH*

By JAMES L. WADE, M. D., F. A. C. P.
Parkersburg, West Virginia

SUDDEN DEATH is a dramatic incident in the always dramatic business of living. To the laity the tragedy of a precipitate exitus is at once startling, terrifying and mystifying. To physicians such a termination of life is often a vexing problem and very difficult to solve or to explain. Sometimes, even after the pathologist has had his "inning", sudden death may be unexplainable by autopsy findings.

The term "sudden death" may be defined as: "The occurrence of death in a sudden manner, within a few seconds to several minutes or even a space of hours after alarming symptoms have their onset." We realize that the above definition is open to some criticism in that "sudden death" may be blamed if a person is found dead in bed of supposed "natural causes", when the symptoms and mode of death are unknown. We feel that the term "natural causes" is not justified. We do not know definitely if there is such a thing as a "natural" cause. "Senility" is always a makeshift diagnosis! Hamman, in thirty years of experience, has shown (L. Hamman, Bulletin — Johns Hopkins Hospital, December, 1934) that "sudden death", when the cause was accessible to explanation, has been "due in every instance to some disorder in the circulatory apparatus." Perhaps we could better define as sudden death, "any death which comes quickly under circumstances when its immediate arrival is unexpected." Here again, criticism may be directed against the definition because all of us have had patients in which we feared a sudden demise, and as a matter of fact, we have possibly warned the family of such a probability. Thus the arrival of death was not unexpected. Reviewing such cases, I dare say, all of these patients had some apparent

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*Chairman's address before Section on Internal Medicine, West Virginia State Medical Association, Charleston, May 13, 1941.

disease of the circulatory apparatus, particularly if we include the whole cardiac, arterial, pulmonary and venous systems.

In contradistinction to such obvious "cardiovascular cripples", however, one may recall perplexing problems arising from the totally unexpected death of a healthy child, a robust young adult, or a supposed "sound" middle aged person. At times a competent pathological survey will fail to reveal adequate acute structural lesions to explain the death. Such anatomical surveys may offer some chronic lesion as the "cause", but such an explanation is often not convincing proof, or even good evidence of sudden death. This is indubitably true when such chronic lesions are often found at autopsy in persons dying from accidental or obvious other cause, and have apparently been entirely compatible with life. The "why" of sudden death in individuals found to have similar degrees of structural damage at autopsy, is not always explained.

CAUSES

A whole host of "causes" for "sudden death" may be found in the literature, and case reports with correlated clinicopathological findings are presented. The profession has come to suspect some cardiovascular disaster, and this is usually true, in those cases in which at autopsy the pathologist is able to reveal adequate organic changes. These cardiovascular causes are listed as follows: (Hamman)

(1) Sudden stoppage of the heart.

(2) Hemorrhage.

(3) Arterial embolism or thrombosis.

(1) Sudden cardiac standstill may result from one of two causes:

(A) Exhaustion after a long struggle against overwhelming odds. This is exemplified by the failing heart of a patient in severe congestive heart failure; by the tiring heart of an individual exhausted by some severe toxemia, such as pneumonia; or one of the exanthemata; and by the laboring heart of a sufferer in the throes of a large myocardial infarction with symptoms of anoxemia.

(B) Sudden stoppage of a heart which has been satisfactorily doing its job. The situation, when in the midst of apparent perfect health the heart precipitately stops functioning, offers a most dramatic question and has piqued the curiosity of physician and pathologists alike. An adequate physiologic explanation is offered in such an event, in the term "ventricular fibrillation." While ventricular fibrillation cannot be said to offer proof in all cases of sudden cardiac death, it has been strongly suggested from observation on patients with complete auriculoventricular dissociation ("heart block"). These patients are subject to sudden episodes of unconsciousness, in which actually "life stops"; the heart tones are not audible, the pulse is not perceptible, and respiration is slowed or suspended. Careful electrocardiographic studies have been repeatedly done on patients during such an episode of cardiac inhibition, and follow a remarkably similar course in graphic recordings. The similarity has been noted in induced experimental sudden death in animals, and may be briefly summarized as follows: Preceding the syncopal attack, the first abnormality noted is a few extra systolic contractions; these increase in number and in site of origin, followed by more irregular ventricular contractions; then by rapid ventricular fibrillation with inaudibility of the heart sounds and absence of palpable pulse. If the fibrillating phase is of short duration, fainting occurs but recovery follows after a few rapid irregular contractions, by a resumption of the slow regular ventricular rhythm. In phases of longer fibrillatory duration, cyanosis, stertor, deep coma, and convulsions followed by death, result from continued arrhythmic movements, such fibrillations gradually dwindling to the final shudder of the dying heart.

VENTRICULAR FIBRILLATION

Ventricular fibrillation is denied by Weiss (Weiss, Soma — N. Eng. J. Med., March, 1940) in his studies of sudden death in syncope, collapse, and shock. But certainly the underlying physiologic mechanism is

similar, and it is perhaps not too far afield to suggest that ventricular fibrillation is the ultimate cause of all cases of cardiac death, regardless of the precipitating pathological or physiological factor. Such an etiological factor is denied by Weiss in the cases of cardiac standstill of reflex origin, but strongly implicated (at least by inference) in the cases of cardiac syncope, and in the cases of sudden cardiac arrest in disease of the cardiovascular system. Of course in reflex cardiac arrest, as exemplified by the hyperactive carotid sinus reflex, sudden death does not necessarily follow the reflex inhibition of the cardiac cycle. Recovery from "vasovagal" or "hyperactive carotid sinus reflex" syncope is usually the case, if stimulation of such reflexes is abolished or overcome. Granting the combined presence of a hyperactive reflex mechanism, and a diseased cardiovascular component, the possibility of sudden death ushered in by ventricular fibrillation becomes tenable, and may serve to explain some otherwise obscure cases of sudden death.

(2) Hemorrhage may produce its effect and sudden death from blood loss, as exemplified by:

RUPTURE OF AN ANEURYSM

(A) The rupture of an aneurysm, either intracranially or elsewhere:

Mr. A. W., age 45, a machinist, was brought into the receiving ward of St. Joseph's Hospital in a stuporous condition, breathing heavily, and obviously in extremis. The resident was unable to obtain any history, and a very incomplete physical examination was done. The patient expired a few minutes after being brought into the hospital. Without adequate history or physical, of course no comprehensive diagnosis was made other than "vascular accident."

After the autopsy, we obtained a history that for over a year, the man had had a hacking, unproductive cough, coming on in episodes and paroxysms, and that there had been increasing hoarseness. With even this scant history, it is entirely probable that we would have made the diagnosis before death.

This is a case of sudden death, since he had a severe paroxysm at four p. m., followed by marked dyspnea, restlessness, unconsciousness, and death at five p. m. The autopsy revealed a large saccular aneurysm of the descending thoracic aorta, which had ruptured and filled the left pleural cavity with blood.

PEPTIC ULCER BLEEDING

(B) By rupture of an esophageal varik, or by:

(C) Bleeding from a vessel in the floor or wall of a peptic ulcer.

An elderly Jewish merchant, about 65 years of age, was seen by the writer in the receiving ward of the Pennsylvania Hospital when the writer was serving his internship. The man was obviously dying; he had vomited blood all over himself and the car in which he arrived, and was pulseless on admission, feebly moaning and stirring restlessly from side to side. The recollection of physical findings is somewhat blurred by the space of nine years, but as well as the writer remembers, the blood pressure was very low, the heart sounds distant and irregular, and the skin cyanotic. Despite immediate transfusion, supportive treatment, etc., the patient succumbed in about one hour. Autopsy (by Dr. Bauer) revealed a large carcinomatous ulcer near the pylorus with an open artery in the crater; pure blood filled the stomach.

Hemorrhage may produce its effect and sudden death by pressure upon surrounding structures or vital centers, as exemplified by:

(A) An aortic aneurysm which ruptures into the pericardium producing tamponade.

Mr. W. B., age 54, white, a retired railroad man, was seen by the writer at the request of Dr. K. J. VanHorn. The patient gave a history of "asthma" over two or three years, and was in mild congestive failure with dry cough and peripheral edema. He was advised that hospital care was needed and entered the hospital the same day. Physical examination showed suspicious widening of the retromanubrial dullness and cardiac hypertrophy to the right with signs of aortic insufficiency. A tentative diagnosis of syphilis of the cardiovascular system with aneurysm of the ascending aorta was made, and confirmed by serological studies, fluoroscopy, and x-ray. No attempt at antiluetic therapy other than oral potassium iodide was made, and efforts at diuresis and digitalization were unsuccessful. Dyspnea and cough persisted and required morphine for palliation. At 10:30 a. m. after a fair night, the patient complained of

"smothering", became very restless and cyanotic and expired within a few moments. A diagnosis of ruptured aortic anuerysm with a question of cardiac tamponade was made.

Autopsy showed the diagnosis to be correct. The pericardial sac was filled with blood and a three-fourths inch linear tear in the first portion of a dilated aorta was found.

RUPTURE OF CEREBRAL ANEURYSM

(B) Or by the rupture of a cerebral aneurysm or vessel.

Miss Mary B., white house maid, aged 21, was seen by the writer at 10 p. m. after a hurried phone call from her employer. The patient was deeply unconscious; breathing was stertorous; she was lying on the floor where she had fallen, and the muscles were flaccid throughout. Blood pressure was recorded at 230 systolic, 130 diastolic. The heart rate was slow; there was a definite irregularity, and the tones were quite weak. The pupils were equally contracted; there was a slight rotary nystagmus, and a slight rigidity of the neck. Corneal reflexes were absent on the right; Babinski sign was positive bilaterally; abdominal reflexes were absent. The patient was immediately sent to the hospital, where a diagnosis of ruptured aneurysm of the Circle of Willis was made and confirmed by the finding of pure blood in the spinal fluid.

No hope was held for her recovery, but through a great deal of luck and the kindness of Providence, combined with spinal punctures twice daily with removal of all the fluid possible, she finally, after six weeks, was able to be up and about the ward, and was discharged in two months feeling well, with a blood pressure of 210 mm. of mercury systolic, 130 diastolic, and no marked pathological localizing signs.

This was in March, 1937, and illustrates that occasionally a patient marked for sudden death from ruptured intracranial aneurysm, may recover temporarily. This patient has been seen recently, and shows at this time a persistently elevated blood pressure, both systolic and diastolic, but is symptom free. She is living on borrowed time, however, for I feel that her healed-over aneurysm will rupture again with probably fatal results.

Miss J. A., age 19, white, Viscose worker, was brought to the hospital in an ambulance, in deep coma and having generalized convulsions.

Fellow workers said she had apparently been in good health at noon, when she ate in the company cafeteria, and returned to her job. At 2:15 p. m. she suddenly put her hands to her head, shrieked, and "fell to the floor in a faint." Her co-workers picked her up and rushed her to the first aid station, where she began to have what were apparently generalized convulsions of a clonic type, became incontinent, and "looked like she was dying." She was! When seen by the writer she was in deep coma, the neck was very stiff, and the pupils widely dilated, breathing was labored, and the heart sounds faint and irregular. Bilateral extensor reflexes on plantar stimulation, absent abdominals, and flaccidity were other pertinent neurological findings.

After an immediate lumbar puncture showing a fluid which was grossly bloody, a diagnosis of rupture of a congenital aneurysm of the Circle of Willis was made. The patient expired in approximately one and one-half hours after the onset of symptoms, and while under observation by the writer.

Autopsy revealed a ruptured aneurysm about the size of a hazel nut, on the left side, near the origin of the anterior cerebral artery. The subarachnoid space was filled with clotted and liquid blood.

TISSUE DAMAGE FROM BLEEDING

Hemorrhage may produce its effect and sudden death by tissue damage from bleeding into parenchyma as illustrated in:

(A) Intracerebral hemorrhage, or

(B) Sudden hemorrhage into the adrenal glands.

Mrs. N. H. C., age 58 years, was admitted to the hospital for treatment of a failing heart, the etiology of which had been a previous coronary occlusion with myocardial infarction. At the time of admission to the hospital, the patient was dyspneic, cyanotic, and had a definite auricular fibrillation with evidences of generalized anasarca. Her course in the hospital was favorable. She responded to digitalization, mercurial diuresis, and other accepted measures. On the morning of the seventh hospital day, after a good night's sleep, the patient complained of being very "faint", and feeling like she was "falling through space." Immediately following this, in the presence of the writer, she became dyspneic, cyanotic, and was dead within two minutes. During this time a stethoscope was applied over the heart area, and the impression gained that

the ventricle was fibrillating. Unfortunately, no electrocardiographic tracing was taken.

The autopsy revealed one of the rarer causes of sudden death; namely, bilateral hemorrhage into the parenchyma of both adrenal glands.

(3) Arterial embolism with thrombosis may be produced either from the systemic veins, from within a larger artery, or from the cardiac chambers. The first is best illustrated by pulmonary embolism resulting from venous thrombi; the second by the intravascular thrombosis following slowing of the blood stream by plaques or subintimal hemorrhage and subsequent fragmentation with smaller emboli; and the last by an embolus from the auricle in fibrillation. It is almost axiomatic in the case of emboli that the larger the embolus, the more extensive the damage it may cause in its site of final lodgment and obstruction. Illustrate (Case—Mr. M., reported by the writer in WEST VIRGINIA MEDICAL JOURNAL, February, 1940).

ARTERIAL THROMBOSIS

In the case of arterial thrombosis arising in the coronary system, the above does not necessarily follow—for a small thrombus may cause instant death in one instance and in another the patient with a huge thrombus with infarction will live and possibly recover completely clinically. It is possible that the explanation will be found in the location of such myocardial damage and its proximity to the cardiac neural mechanism.

From the various reports in the literature regarding autopsy confirmation of the cause of sudden death, there are several presenting large series of cases (Lisa, J. R. and Hart, J. F.—Arch. Int. Med., July, 1939 and Hamman, Louis, etc.). It appears that from 90 to 92 per cent of all causes of sudden death are cardiovascular in origin. This statement is qualified, however, by stating that "if the cause could be found", and recognizes that certain cases present no ascertainable cause. The remaining eight to ten per cent of the causes of sudden death present a long and almost unlimited list of diseased states and conditions. It is interesting to note that none of the present day investigators feel that the so-called "status lymphaticus" exists as a pathological factor in sudden death.

Brain tumor is listed as a cause of sudden death, but it is generally the effect of the brain tumor on a vascular structure with production of hemorrhage, thrombosis, or edema and is thus vascular in origin.

Anaphalactic shock, especially hypersensitivity to cold, may be the cause of sudden death in a susceptible individual. It seems that food allergy is indeed a rare cause, while parenteral allergen introduction is not at all a common cause and in any event is no longer an unknown one, since it is not a "natural phenomenon." In a similar category are cases of sudden death following injection of a mercurial diuretic, the use of diodrast intravenously in diagnostic urologic procedures, and the use of novarit intraperitoneally. These are the "freaks", and represent merely interesting and bizarre case reports. The reports of Soma Weiss, F. Murphy (Memphis Med. J., 1939), Smith, et al, relative to deaths due to syncope from hyperactive carotid sinus reflex phenomena, have been discussed earlier in this report.

SUMMARY OF CAUSES

Summarizing the known causes of sudden death, we can see that the cardiovascular apparatus is easily the greatest offender in at least 90 per cent and possibly more, of the cases; but our conception of the sites at which trouble occurs must be changed somewhat. A few revised and recently accepted statements can be relied upon to aid us in establishing at least a fair per cent of correct diagnoses.

(1) Probably the most common cause of sudden death in young adults is a ruptured aneurysm at the point of origin of the cerebral arteries in the Circle of Willis.

(2) In apparently healthy males, the most likely cause of immediate death is in the coronary system, either acute or chronic coronary artery occlusion.

(3) In elderly patients, so prone to be found dead in bed, the cause is often from hemorrhage from the arterial system—either intracranially or in other body cavities.

(4) Status lymphaticus has no pathological basis as a cause of sudden death.

(5) The heart, especially the myocardium, must be suspected as a seat of "infectious myocarditis" in infection in the young and the very old, for it has been known for many years that patients in these extremes of age are particularly liable to succumb suddenly in fulminating acute infections.

(6) Possibly the ultimate cause of all cases of sudden death may be ascribed to ventricular fibrillation, though this is disputed by some reliable investigators.

PRESUMPTIVE DIAGNOSIS

A physician, confronted with the problem of ascribing a death of "sudden nature" to a definite cause, is most interested in a sensible approach to a presumptive diagnosis. Obviously, it is much simpler to make a correct attempt at a diagnosis if we have examined the patient previously and have some knowledge of the preexisting physical findings. A reasonable history from some intelligent relative or friend may serve as a clue upon which we may hazard a diagnosis. Furthermore, if the patient has been under competent hospital observation, we may have the use of records which will be valuable.

The most difficult diagnostic problem is offered when a stranger, who has fallen in the street or at work, is brought to the hospital in a dying condition. Often such an individual is seen by the hastily summoned physician amidst a crowd of horrified, frightened, and often "helpfully hindering" persons. A most important point to remember is that foul play is always a possibility, and that poisoning or trauma must be excluded before considering a more "natural" reason for the sudden demise. Supposing that we can exclude the above mentioned factors, then the most likely possibility is that there has been some cardiovascular catastrophe. It may have been either, (1) sudden cardiac standstill, or (2) hemorrhage, or (3) arterial thrombosis or embolism. Since cardiac standstill can, I believe, be called "heart failure", and since it is three times more common as a cause of sudden death than the two other causes listed, we can presume that the sudden death is due to an acute coronary occlusion. In considering sudden heart standstill from coronary occlusion, please remember that coronary embolism is a rare finding, occurring presumably from bacterial endocarditis, if at all. Instant death from hemorrhage is probably always due to the rupture of an aneurysm. The most common sites of such aneurysms are in the thoracic aorta, the cranial cavity, and the abdominal cavity in that order. Aneurysm of the aorta is usually, though not always, syphilitic, and frequently ruptures into the pericardial cavity producing cardiac tamponade. Cardiac tamponade can sometimes be detected by careful blood pressure readings and examination of the heart sounds. A dissecting aneurysm may rupture into the pericardial cavity (80 per cent), or into the pulmonary cavities. Hemorrhage elsewhere is rarely acutely fatal unless it be a massive intraventricular hemorrhage or one involving a large parenchymatous cerebral area. If one can exclude the above conditions as the cause for sudden death, then we must consider the almost unlimited group of possible causes. It is annoying and perhaps humiliating to admit that diagnosis is at best uncertain, especially when the patient is seen for the first time, in extremis, and when an adequate history or a thorough physical survey cannot be obtained. We may glean a speck of comfort from the fact that at best, a probability of being correct is not more than 35 per cent and probably less, and that often our colleague, the pathologist, after he has had hours of time and study of organs, removed and in situ, cannot for certain put his stamp of disapproval upon the organ or organs responsible for sudden death.

THE CONSERVATIVE USE OF POSTERIOR PITUITARY SOLUTION IN LABOR*

By HENRY E. BAUM, M. D.
Charleston, West Virginia

PERENNIALLY, since its introduction into obstetric practice in 1913, dignitaries of the art have met to deplore the abuse of pituitary extract in labor. As a consequence, the dose has been reduced and the indications restricted, but the drug has never been irrevocably damned. So glamorous is its appeal that sad experience alone has been fully able to teach the practitioner how dangerous it can be. As Ben Franklin said, "Experience is a dear school, but some people will learn in no other." To which De Lee adds, "In this case it is unfortunate that mothers and babies have to pay the tuition." When, after thirty years of experience with this extremely valuable drug there continues to be widespread misapplication of it, something is radically wrong.

The members of the West Virginia Society of Obstetrics and Gynecology devote all, or a great part of their time to this specialty. We are not a numerous body, and the organization is still young, yet one day the practitioner in this state will begin to look to this society for guidance and leadership in obstetric matters. The specialist should assume a double obligation—to his own patients, and also to the men who still deliver the vast majority of the women in this and every other state in the union. For this reason, if for no other, each state should have its own obstetric and gynecologic society. One need only cite the experience of North Dakota, a state with only fifteen obstetric specialists and one maternity hospital. Their obstetric section has worked out a comprehensive program for continuation study which utilizes its own membership and the facilities of the neighboring University of Minnesota. It is significant that North Dakota now has the lowest maternal mortality in the nation.

THE AUTHOR

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But if our society recognizes its obligation to exercise fully its educative function, and agrees to keep the practitioner abreast of modern developments in this field, we must be certain that we do not ourselves miss the mark, nor countenance the harmful obstetric practices of those who overstep it. "The specialist", says Eastman, "is veering in the direction of substituting at various stages of labor, artifice for the ofttimes slow, cruel, ineffectual vagaries of nature. * * * Cesarean section has increased fivefold. * * * The frequency of low forceps has shown an even steeper rise, whereas analgesia to the point of amnesia is almost routine in most large centers. Some of these practices are at times used ill-advisedly, but if anyone's nostalgia for the 'old days' persuades him that we shall ever go back to the 'natural obstetrics' of a few decades ago, he is grievously in error * * * because our obstetrics today is better obstetrics than that practiced by our fathers. * * * Fewer women die, fewer babies die, and fewer women are left scarred, either physically or mentally, as a result of the process."

This type of obstetrics, however, can be practiced only in the well-equipped maternity hospital, or in special maternity divisions of

*Read before the West Virginia Society of Obstetrics and Gynecology at the meeting of the State Medical Association, Charleston, West Virginia, May 14, 1941.

general hospitals, and in many instances only by men who are qualified by virtue of their training and experience to perform major obstetric surgery.

It follows then, as Eastman has so aptly shown, that two distinct types of obstetric practice are rapidly being evolved—one in the well equipped hospital and the other in the home. The general practitioner does nearly all of the home obstetrics, and home obstetrics still constitutes about 85 per cent of the total number of deliveries in West Virginia. What has all this to do with posterior pituitary solution? Just this: In the hospital, rules can be formulated and enforced by the heads of the various maternity divisions to limit its use to strict indications and dosage. There is, however, no way of controlling the abuse of this potentially crippling drug in home obstetrics. Education and disastrous experience alone can solve the problem.

FREQUENCY OF USE

There is no direct way of ascertaining how frequently posterior pituitary is used in labor. Plass has some interesting figures on 1,000 home deliveries in Iowa, which reveal that solution of posterior pituitary was used to strengthen labor pains in 325 cases, or 32.5 per cent. It is my impression that the drug enjoys a great vogue in West Virginia, although one cannot give percentage figures without a special study.

This discussion will be concerned with the use of posterior pituitary solution in the first and second stages of labor, since nearly all obstetricians are convinced of its efficacy in the third stage, as well as in certain abortal and puerperal conditions. What are the dangers of administering pituitary extract? De Lee has summarized them as follows:

A. In the mother:

1. It can produce so-called pituitary shock, sometimes of profound degree, even with small doses. (Note: Some of these objections would also hold for its use in the third stage.)

2. It upsets the hormone balance of the body, and should therefore be avoided in diabetes and dysthyroidism.

3. In severe heart disease, the added strain of tumultuous labor can produce worse cardiac damage, and even death.

4. In eclampsism, it can produce convulsions, pulmonary edema or both.

5. Anaphylactic reactions are not rare. There may be severe pruritis, urticaria, edema of the face, eyes, glottis, lungs, and even shock.

6. The greatest dangers, however, come from the increased intensity and duration of the uterine contractions. It is here that misapprehension of the obstetric situation invites calamity, for in the presence of cervical obstruction, overstretched lower uterine segment, Bandl's ring, malpresentation, manifest disproportion, or rigid perineum, the use of posterior pituitary may eventuate in rupture of the uterus. "Many women", says De Lee, "should have the words posterior pituitary solution put in their death certificates instead of postpartum hemorrhage, embolism, massive collapse of the lungs, anesthesia, or shock."

7. The cervix and perineum may suffer extensive damage when as occasionally happens, it stimulates the uterus to blast the head through the birth canal like a projectile.

8. Uteri stimulated by pituitary extract occasionally become secondarily atonic, with clot retention, thrombosis, and embolism.

B. As for the babies, it is equally if not more dangerous. During normal labor the baby is subjected to increased pressure from all sides with each contraction. The fetal head receives the brunt of this force. Unduly frequent, prolonged contractions produce asphyxia through interference with the placental circulation, with consequent chemical, as well as physical changes in the brain. The brain is a very tender organ in the infant, which stands the insults of labor poorly. One should therefore not augment the intensity of these forces without a very good reason.

Each of us can recall disasters which resulted from the injudicious use of this drug, be it a stillborn baby, a ruptured uterus, profound shock, a lacerated cervix or perineal body, or an incarcerated placenta. Yet there is no reason to believe that its popularity in labor, given in half and full ampule doses, has abated. I submit that "getting away with" a particular procedure does not constitute sound medical practice, especially since there are very few instances wherein the drug is given that the convenience of the physician is not the primary consideration.

INDICATIONS FOR USE OF PITUITRIN

It seems that I have taken the same position as did one of the participants in a recent symposium on the problem of posterior pituitary solution in labor. He opened his discussion by paraphrasing a statement of Mark Anthony's. "Apparently", he said, "we have come to bury pituitrin, not to praise it." Nevertheless, a majority of those who practice sound, modern obstetrics believe that there are a few definite indications for its use. I would like to discuss briefly what I believe should be the indications, conditions and dosage under which it is permissible and advantageous to use pituitary extract during labor:

I. In the Induction of Labor: First of all, I believe that with few exceptions, the induction of labor should be practiced only on strict indication. For this purpose pituitary extract may be employed, in the absence of such complicating factors as eclampsism, heart disease, and mechanical obstruction from whatever cause. An ounce and a half of castor oil is given three hours beforehand, followed by a hot enema. The initial dose of pituitary extract should be not more than two minims, given with a tuberculin or an 0.25 c.c. syringe. The attending physician should be in the room with ether and a mask at hand. The uterus should be watched closely and the fetal heart auscultated frequently if hard pains begin. Tetanic contraction requires that the patient be anesthetized immediately. The patient should also be observed for signs of pituitary shock or anaphylaxis, particularly when the doses are repeated. The second dose consists of two minims twenty minutes later, and thereafter a like dose every twenty minutes until some effect is seen, or until a total of six doses have been given. If contractions begin and then die off, the course is repeated, using two minims every twenty minutes for six more doses. The drug should be stopped after any dose which is followed by good, regular contractions. If labor does not ensue within six hours after the second trial by pituitary extract, my practice is to rupture the membranes artificially. The drug may then be repeated in two minim doses six hours later, if the patient has not by this time fallen into true labor.

PRIMARY INERTIA

II. During Labor Itself: Hofbauer, who introduced pituitary extract into obstetrics, intended the drug to be used principally for cases of true primary inertia, in the first stage of labor. His original indications, conditions and dosages have been but little improved upon, although I have not used the drug intranasally as he recommends. The question is: What is true primary inertia? Sharkey suggests that it is probably a disturbance of the uteromusculonervous mechanism, prone to occur in elderly, nervous primiparas, in multiparas who have had a long interval between pregnancies, in some types of obesity, and in the anemic, asthenic type of patient. It must certainly be distinguished from false labor, which is in no sense an indication for the use of pituitary extract. Davis says that if we cannot determine when we are dealing with true primary inertia it would probably be better not to use the drug at all. I never use posterior pituitary until the patient has had true labor pains, albeit weak and infrequent, for at least 20 hours. The cervical canal should by this time be obliterated, with beginning dilatation.

Sharkey has used pituitary extract for primary inertia only eighteen times in 10,241

successive ward and private cases, while E. L. King of New Orleans, states that in his clinic the drug is used only four or five times in the 4,000 cases they deliver each year. He says, "We have more worry and discussion over whether we should use pituitary extract than whether we should or should not perform a cesarean section." Sharkey lists the following mechanical contraindications to the use of this drug in labor:

MECHANICAL CONTRAINDICATIONS

1. Generally contracted pelvis.
2. Abnormal fetal position, such as persistent posterior, breech, shoulder, face, or deep transverse arrest.
3. Tumors of the uterine wall, or other tumors which block the birth canal.
4. Bicornuate uterus.
5. Great multiparity, with thin, stretched out uterine musculature.
6. Overdistended uterus, as with polyhydramnios and multiple pregnancy, especially after rupture of the ovisac.
7. Scars in the uterus from previous operation or disease.
8. Rigid, undilatable cervix.

In addition, no patient with severe heart disease or with eclampsism should receive pituitary extract under any condition whatsoever.

In primary inertia pituitary solution may be administered as follows: With ether and mask in the room, one minim is given, observing the patient carefully. Twenty minutes later two minims are given and a similar dose is repeated in twenty minutes for a total of four doses. The drug is stopped after any dose which is followed by intensified, regular pains. If the first course has no effect, it may be cautiously repeated in eight hours. I agree with De Lee, that when pituitary extract is used in labor it must be handled as if it were dynamite.

Throughout this paper, I have referred to the whole extract of the posterior lobe of the hypophysis which is marketed in ampules containing 10 vogtlin units to the cubic centimeter. No convincing evidence has been brought forth to indicate that thytuitary, pituthymin, thymophysin and the like, are anything more than diluted or disguised posterior pituitary solution. I prefer pituitary solution for its greater accuracy, and because I cannot be lulled into believing that the thymus contained in the products mentioned, in any way modifies the action of the drug.

III. In Late Inertia or Atony: I have not thus far found it necessary to use pituitrin for inertia in the second stage. Following complete dilatation, with the head near or on the perineum, it is far safer to do a low or outlet forceps operation with episiotomy, than to give the woman a shot in the arm to blast the baby out of her body. I say this even though the patient may be partially anesthetized at the time. Every man who practices obstetrics should be able to do an episiotomy, and a low or outlet forceps operation. The mother's soft parts and pelvic supports, and the baby, will suffer far less, I am certain.

Nor have I used pituitary extract when the cervix is fully dilated or nearly so, and the pains have stopped. If the condition is due to exhaustion after many hours of hard labor, it is better to give rest, sedation and glucose, and prepare the patient for operative delivery or another trial of labor.

In home obstetrics, when confronted with secondary inertia, it is not always possible to do outlet or low forceps operations because of lack of facilities. Most authorities agree that in such instances, in the absence of complications, and preferably in multiparas, posterior pituitary solution, in not more than two minim doses, may be permissible instead of forceps.

SUMMARY

1. Widespread abuse of posterior pituitary solution in the first and second stages of labor continues, despite frequent warnings about its dangers.

2. Members of the West Virginia Society of Obstetrics and Gynecology should adopt safe, modern criteria for its use in labor in the hospital, and should seek by education to limit its indiscriminate use in the home.

3. In the mother injudicious augmentation of the forces of labor can produce lacerations of the cervix, vagina, and perineum, rupture of the uterus, shock and anaphylaxis. In certain circulatory disorders, in heart disease and eclampsism its administration may prove disastrous.

4. In the baby, the drug may produce asphyxia, cerebral damage, and may even eventuate in stillbirth.

5. Proper indications for its use include: (a) For the induction of labor on definite indication. (b) In the rare case of true primary inertia. (c) Rarely, instead of forceps when the second stage is prolonged, the pain weak or absent and where there are no facilities to deliver by forceps.

6. The dose should never exceed two minims, and it is better to begin with one minim.

7. Thymophysin and similar preparations, which are either disguised or weak posterior pituitary, are not recommended.

CONCLUSION

Pituitary extract can be a great boon to the woman in labor when it is properly administered. When it is abused, it becomes a very grave danger. No physician should use it without a suitable indication, and then only in small doses.

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EVALUATION OF HUMAN IMMUNE GLOBULIN IN MEASLES

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During the early months of this year, as was to be anticipated, a measles epidemic broke out in this community. Measles is more widely prevalent than any other contagious disease and, being more contagious, it spreads with greater rapidity. The application of quarantine measures that are frequently useful in the prevention of other communicable diseases is rarely effective in the control of measles. It is now generally recognized that the closing of schools during the outbreak accomplishes nothing. Nevertheless, all children with measles should be isolated as soon as the disease is recognized.

Statistics from the United States Bureau of the Census confirm the well-known fact that death from measles is usually due to one of its complications. The layman is not aware of the seriousness of measles and often expresses the contemptuous opinion that "measles is nothing to worry about." Yet, measles ranks next to diphtheria in the number of deaths caused by the four principal communicable diseases. Due to its sequelæ every effort should be made to prevent children from having it, especially sick babies and the very young.

At present it may be said that active immunity against measles can only be acquired by an attack of the disease. Many workers have offered evidence but no one has definitely proved that active immunity can be

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stimulated in any other way. Passive immunity is entirely another matter. There are two methods of giving passive immunity: (1) By injections of immune serum, which has the definite disadvantage of being difficult to obtain, and (2) by immune globulin, which is available commercially, but which may, in some cases, entirely prevent the disease. In large centers, it may be noted, serum can be obtained easily.

ACTIVE IMMUNITY

Various workers such as Hewman in 1915, Regan, and Zingher have written about active immunity. Due to inherent disadvantage their methods of inducing immunity against measles were never widely applied.

Weisbecker in 1896 published a detailed account of the use of convalescent serum for therapeutic purposes. The next contribution to the study was made by Nicolle and Conseil in 1918 when they published an account of a successful campaign for prevention of measles with convalescent serum. This preparation has also been used for therapeutic purposes but is considered of little value. It is useful in the prevention rather than in the treatment of measles.

The studies on the source of the immunity exhibited by infants up to the age of six months led McKhann and his associates to the discovery of human immune globulin. Their methods are by now well known, that is, the use of human placentæ in the manufacture of human globulin. The impression at present is that human globulin is comparable in effectiveness to convalescent serum, with the additional advantage of being readily available. The reactions are slight, and certainly are not sufficient to contraindicate its use.

The usual question arises with regard to the use of globulin; that is, should steps be taken to modify measles when only passive immunity of short duration can be expected? It remains to be seen to what degree measles can be modified without hindering the development of a permanent immunity, since active immunity can only be obtained by acquiring the disease. According to Robert Strong, "the consensus seems to be that immune globulin should be reserved for preventing measles in institutions, small infants, and for modifying the disease in debilitated children at the time of exposure." This, of course, is open for discussion.

Human immune globulin is commercially available in two c.c. and 10 c.c. vials. The dosage suggested is two c.c. in children under three years who have been intimately exposed not over three days. Older children should receive 0.25 c.c. for each year after three up to a maximum of four c.c. As the

TABLE I
CASES RECEIVING HUMAN IMMUNE GLOBULIN

No. of Cases	Age in years			Source of Exposure	Measles			Serum I. M.	Compli-cations	Temp. °F	Days Ill	Remarks
	8/12 to 2 yr.	2 to 6	6 to 10		Completely Protected	Modified	Severe					
64	20	40	4	Playmate 18 Family 46	8 12% See Table II	50 78%	6 10%	Under 2-2ccs Over 2-4ccs	None	100 to 102.5	2 to 2½	
				CASES OF MEASLES DURING EPIDEMIC AS CONTROL GROUP								
60	16	43	1	Playmate 29 Family 31				See Table IV	See Table III	103 to 105	5 to 6	one death

Comparison of patients receiving human immune globulin following exposure to measles and those patients having measles who did not receive human immune globulin.

time of exposure lengthens, the dose must be increased. The dose for modifying the disease after measles has developed ranges from three to 10 c.c., depending upon the stage of the disease at the time of administration.

In this study I have confined myself entirely to the use of human immune globulin. Lederle's human immune globulin was used. It was used chiefly with the hope of modifying the attack of measles, rather than preventing the disease, which is, as has been stated, the chief function of convalescent serum. The sulfonamides have not been observed to have any effect on the course of this disease but may be effective in the treatment of the streptococcal or pneumococcal complications.

PROPHYLACTIC PROCEDURE

At present, prevention or modification of the disease by the use of human immune bodies remains the only dependable prophylactic procedure. Convalescent serum is more uniform in disease potency and causes less reaction. Immunity from these substances is passive in character and lasts only two to three weeks if modified measles is not encountered. Early in the incubation period it will usually prevent the disease, while later in the incubation period it may modify it. In the latter instance the incubation period is often prolonged. The severity may be reduced to such an extent that the typical features are not observed. Complications are usually avoided. The attenuated disease is thought to give permanent immunity and is the desirable result of serum administration.

MATERIAL FOR STUDY

At the beginning of this epidemic I had mimeograph forms made to use in tabulating the cases of measles. I divided the study into two groups: (1) those having been definitely exposed either by members of the family or playmates, and (2) those having the disease. I attempted to obtain nearly the same number of cases for each group. The first group was given human immune globulin as quickly as possible after exposure and never later than three days after the source of contact had developed a rash. In many instances the contact was with members of the same family. In many cases the differences in the illness between the contact and the exposed child receiving human immune globulin were remarkable. These cases were carefully observed and the mothers given instructions as to the findings and observations. Phone calls were made as well as home visits to confirm findings. A tabulated chart was kept on each child given globulin.

DISCUSSION

In the sixty-four cases of children receiving human immune globulin twenty ranged from the age of eight months to two years, forty from two to six years, and four from six to ten years. Eighteen of these sixty-four children were exposed by playmates, while forty-six were exposed by members of the family. Eight children, or 12 per cent did not develop measles; fifty, or 78 per cent developed what I called modified measles, and six, or 10 per cent developed severe measles comparable to the disease as seen in

TABLE II

AGE GROUP IN CASES COMPLETELY PROTECTED AND SEVERE MEASLES FOLLOWING HUMAN IMMUNE GLOBULIN

Completely Protected Source Contact	Age-Yr.	No Effect—Developed Severe Measles Source Contact	Age.-Yr.
1. Playmate	1½	Family	5
2. Family	1	Family	6
3. Family	3	Family	8
4. Playmate	2	Family	10
5. Family	2	Family	4
6. Family	5	Family	6
7. Family	2		
8. Family	9 Mos.		

In the completely protected group too much human immune globulin may have been given as the age group was fairly young. In the group that developed severe measles the age group was older and the human immune globulin may not have been given in large enough doses.

the control group. In this entire group of sixty-four children there were no complications. The average temperature was between 100 and 102½ degrees, and the average days illness, fairly sick, was two to two and one-half days. Some of these children were not bedridden, and played as usual. This modified group of fifty children developed rashes rather mild in nature, the cough was not severe, and the entire illness was summed up by one mother as follows, "it seems a pleasure to have measles with the serum."

TABLE III
COMPLICATIONS FOLLOWING 60 CASES MEASLES IN CONTROL GROUP

Complications	Cases
Hordeolum	1
Sinusitis	3
Otitis, Suppur.	7
*Bron. - Pneu.	6
Encephalitis	1
Supp. Adenitis	2

*Begins at time of full eruption or later. (One death). More than one complication in some patients.

In the 60 patients of the control group, that is, those having measles without human immune globulin, the age group between eight months and two years included 16 cases; between ages two to six years, 43 cases, and between six and ten years, one case. In 29 cases the source of exposure was a playmate, and in 31 cases the source of exposure was a member of the family. The average temperature ranged between 103 and 105 degrees Fahrenheit. There was one death in this group, a case of pneumonia that did not respond to the sulfonamides. The average illness was five or six days. There were numerous complications in this group as tabulated in Table III. Pneumonia and otitis media seemed to be the main offenders and in many cases more than one complication occurred in the same patient. One child had measles, chickenpox, bronchopneumonia, toxic encephalitis, bilateral suppurative otitis media and bilateral suppurative lymphadenitis. He was in the hospital for three weeks with a temperature between 103 and 107 degrees, but eventually recovered. Another child, who also recovered, entered the hospital with a diagnosis of lobar pneumonia confirmed by x-ray, then developed measles which was followed by bronchopneumonia.

It is of interest to compare the two groups of cases as far as complications are concerned. The age groups were fairly similar and in the children given human immune globulin there were no complications.

In Table II, I tabulated and compared the groups which were completely protected by the human immune globulin and those who developed severe measles following human immune globulin. In the completely protected group it is of interest that two of the eight cases had contacts from playmates while the other six had contacts from members of the family. The age group was much younger than those who developed severe measles following human immune globulin. Of course, I was not positive of the intensity or duration of the exposure and in younger children the human immune globulin may protect them completely. The serum was given intramuscularly. Under two years of age two c.c. was given, and over two years of age four c.c. was given.

TABLE IV
REACTION TO HUMAN IMMUNE GLOBULIN

Reaction	Cases
Local Edema	6
Erythema	3
Temperature Rise	42
Headache	8
No Reaction	14

One or more occurred in same patient.

In Table IV the reaction to the human immune globulin is tabulated. A rise in temperature seemed to be the main manifestation and in no case was the reaction severe enough to warrant the discontinuation of the method of using the serum. In 14 children of the 64 there was no reaction at all. The mothers were instructed to place the children in warm water if pain was noted at the site of injection. In the children who developed severe measles following human immune globulin, the incubation period seemed to be longer than those that developed modified measles.

Both from the profession and from the laity we often hear that measles serum is of no value. Possibly this opinion is based on observation of cases where serum is given too late or in too small quantities to be of any benefit.

SUMMARY AND CONCLUSION

(1) Sixty-four children who were exposed to measles were given human immune globulin and compared with 60 children who developed regular measles.

(2) The age groups were comparable.

(3) No complications occurred in the group receiving human immune globulin; the temperature was lower and the days of illness shorter.

(4) In this group receiving human immune globulin, 78 per cent developed modified measles; 12 per cent were completely protected and 10 per cent developed severe measles.

(5) Reactions following intramuscular injections of human immune globulin were mild.

(6) Human immune globulin should be administered early and in adequate dosage.

(7) It is of definite value in small and debilitated children.

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OPPORTUNITIES PRESENTED TO THE PHYSICIAN IN THE FIELD OF INDUSTRIAL HYGIENE

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It is well known that environmental conditions in certain workplaces can contribute to diseases among workers which are unique to a particular occupation, and which do not exist in the non-industrial population. However, as will be shown later, occupational accidents and specific occupational diseases, although constituting an important problem in industrial hygiene, do not account for the major part of the time lost due to disability. It is apparent, therefore, that in addition to the problem of controlling accidents and occupational diseases, we are confronted also with the important task of the control of all diseases, which are just as common, and more important economically, among industrial workers as among those of the general population. Hence, the fact is evident for considering industrial hygiene as a function of the general field of public health. It is for this reason that the medical profession plays such an important rôle, since it is one of the chief concerns of that profession to assist in the promotion of better health in the community.

If every plant had an industrial health maintenance program, and if every state health department had a comprehensive industrial hygiene service, then our problem today would not be so difficult. However, recent studies made by the United States Public Health Service, of health service facilities in a large number of industrial establishments, as well as those conducted by the National Industrial Conference Board indicate that such services are still far from meeting our needs, even under normal in-

dustrial conditions. For example, in the Public Health Service analysis of approximately 17,000 establishments employing 1,500,000 workers in 15 representative states, it was found that only 15 per cent of the employees were provided with the services of a full-time physician. These data are sufficiently representative to conclude that 85 per cent of our workers are without such services. This is especially true in those plants employing less than 500 people. We may assume, therefore, that the bulk of our gainfully employed, when in need of medical services, receive them from the private practitioner, be it on a part-time basis at the plant, from "on call" physicians, or from the family physician. This is especially true with reference to the so-called non-occupational disabilities.

HEALTH DEFENSE

Governor McNutt, the administrator of the Federal Security Agency and the coordinator of health, welfare, and related activities in the National Defense Council, stated in a recent speech on "The Special Problems in Health Defense", that there were three health problems of grave import at the present time which are not under control. The first of these three problems is the one of industrial hygiene.

It is now a well established fact that military mobilization and expansion is impossible without industrial mobilization and expansion. The present industrial expansion has already brought in its wake many new problems in employee health. Able-bodied men are being taken into military service and are being replaced in industry by women, young adults and older men. Many of these new workers are not as physically fit for arduous tasks, nor as skilled as the workers they replace. In fact nearly 40 per cent of the men examined by the selective service boards have been rejected. These men must become a part of the 5,000,000 men whom the O.P.M. says will be employed by Easter, 1942. The problem of fatigue, so important in the first World War, will again appear as a result of the speeding up in industrial production.

Many hazardous chemicals, both old and new, are being introduced into industry with little or no time to determine in advance their toxic nature. We may expect crowding in factories and we must fight the tendency to relax in the vigilance so necessary to prevent accidents and disease among workers. Dr. Parran has stated that our industrial machines are rated to be the most efficient in the world and he rightfully insists that the men and women who operate these machines should have a comparable efficiency.

Many occupational hazards are involved in munitions and other defense work. The protection of workmen employed in such work is most important. Beyond that we are faced with the fact that the industrial workman in this country loses, on an average, a fraction over eight days a year from illness, much of it preventable. The rate for women is appreciably higher. This loss of time amounts to the staggering total of 340,000,000 days a year or considerably over 1,000,000 work years a year. The National Safety Council reports 96,500 accidental deaths of all types in the United States in 1940, a rise of four per cent over the 1939 total of 92,623 such accidents. Occupational accidents were 17,000, which is a 10 per cent increase over 1939. This burden confronts the defense program and has to be reckoned with in any production schedule.

The majority of American workmen are employed in small plants. It is most essential, therefore, to give the utmost attention to coordinating with the industrial health program, the medical profession upon whom falls the responsibility of caring for the worker, both inside and outside of industrial plants.

It has been stated by authorities in the field of industrial hygiene that the major types of activity are medical and surgical care to effect prompt restoration of health and earning capacity following disability, the prevention of disability in industry by the

proper control of the working environment, and finally, the promotion of health among workers.

For those physicians holding positions in industry, and especially those completely responsible for furnishing an industrial health maintenance program, the Council on Industrial Health of the American Medical Association has suggested a definite program. This program consists of such functions as periodic inspection and appraisal of plant sanitation and occupational exposures, followed by the adoption and maintenance of adequate control measures. The provision of first aid and emergency services and the prompt and early treatment for all illnesses resulting from occupational exposures are very important functions of the medical department. Impartial health appraisals of all workers, the provision of rehabilitation services for the correction of defects are additional functions of a medical department. And, finally, by means of recording and reducing absenteeism due to all types of disability and the conduct of a health promotion program, it should be possible to make real progress in reducing lost time among workers, thereby benefiting not only the worker as regards his physical health, but also yielding tangible benefits of a monetary nature to employer and employee.

A. M. A. COUNCIL ON INDUSTRIAL HEALTH

The Council on Industrial Health of the American Medical Association has also been very active in stimulating the contributions which the physician individually, and through medical organizations, can make to the health of the industrial worker. As you know the Council has also stimulated the formation of committees on industrial hygiene in state and county medical organizations, and has clearly outlined a program which could be adopted by the state and local societies. I am sure all of you are familiar with this program. However, I would like to expand further on the objectives of this program:

"1. Train physicians to recognize and report occupational disease.

"2. Train industry and labor to the value of industrial health conservation.

"3. Elevate medical relations and standards under workmen's compensation.

"4. Scrutinize all social legislation affecting industrial health.

"5. Clarify relationships between industrial and private practitioners.

"6. Improve relations between physicians and insurance.

"7. Establish working relationships with all state agencies interested in industrial health."

It is highly essential that physicians inform themselves further concerning occupational diseases, so that they will recognize such diseases more readily in the course of their practice. It would be advantageous for a private practitioner to make this effort, in view of the fact that he may be called upon to diagnose and treat such ailments in the course of his everyday practice. In this connection, it is pertinent to stress one other important item; namely, the necessity for obtaining an accurate and detailed occupational history. We all know to what great lengths physicians go to obtain an accurate and detailed personal and past medical history on a patient, yet, often neglect to obtain information concerning the man's exposure to toxic materials in industry. In view of the fact that a man's occupation may have a real bearing on his health, it is highly essential that a history of his occupation be obtained in detail and interpreted properly. Such an inquiry may often necessitate investigating the patient's working environment or at least obtaining information on this point from the proper plant officials, as well as from the patient himself. For example, a recent investigation by the Public Health Service has indicated that manganese poisoning may often be mistaken for multiple sclerosis, or Parkinson's disease.

The private practitioner, either as an individual or through his state and local medical organization, should utilize to the fullest extent the services which may be rendered by

the official industrial hygiene division, and through it the facilities available in the entire health department.

Some of the services which may be rendered by your state bureau of industrial hygiene are:

"1. Consultation with plant management regarding needed corrections of environmental conditions.

"2. Advice to the management and medical supervisor as to the relative toxicity of materials or processes, and advice concerning new materials prior to their introduction into the industry.

"3. Assistance is developing, maintaining and analyzing absenteeism records.

"4. Consultant service to medical supervisors, private physicians, compensation authorities and other state agencies regarding illness affecting workers.

"5. Provision of necessary laboratory service of both a clinical and physical nature.

"6. Integration of the activities of other public health bureaus in their programs for workers; for example, the control of cancer, syphilis and tuberculosis."

In February of this year, the Division of Industrial Hygiene of the National Institute of Health sponsored a conference for the purpose of developing a nationwide program in industrial hygiene in defense industries. This conference was attended by representatives from the various state industrial hygiene units, the Subcommittee on Industrial Health and Medicine of the Defense Council and prominent leaders in the field of industrial hygiene.

A program was adopted by the conference which demands a close working relationship between the Division of Industrial Hygiene of the National Institute of Health, the various state industrial hygiene units and other agencies, both governmental and nongovernmental as the United States Department of Labor, the Council on Industrial Health of the American Medical Association, industry and labor. This program is now in effect.

The program has the following objectives:

1. The evaluation and control of the various health hazards resulting from exposure to dusts, fumes, gases, vapors, and other materials.

2. The provision of advisory services to industry in connection with the construction of new plants and the renovation of old plants, so that adequate facilities for health and safety may be included in the plans.

3. The promotion of physical examinations and medical services for the workers, in order that the benefits of preventive and curative medicine may be applied promptly to their individual health problems.

4. The control of communicable diseases among workers through a control program developed in connection with the general public health services of the community.

ADDITIONAL FUNDS AVAILABLE

Recently congress has made available additional funds whereby the Division of Industrial Hygiene of the National Institute of Health is supplementing the facilities of the state and local industrial hygiene units. The division has today several mobile units, each unit consisting of a physician and engineer, working in key defense industries in cooperation with the state departments of health. The engineering personnel of these units evaluate the working environment and recommend methods for the control of any health hazard revealed by the investigation. The medical personnel, working closely with the local medical organization, appraise the present medical control services in industry and recommend improvements in these services where indicated. The plant management is informed of the importance of such provisions as periodic inspection and appraisal of plant sanitation and occupational exposures followed by adoption and maintenance of adequate control measures. The provision of first aid and emergency service and the prompt and early treatment for all illnesses from occupational exposure are also recommended.

FINGER INJURIES

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FINGER INJURIES are commonly thought of as unimportant, perhaps because the treatment is considered a minor surgical procedure. But a consideration of the frequently serious consequences of improper treatment and the increased time loss which is occasioned thereby, brings the conviction that the subject is not one of trivial nature.

TREATMENT REQUIRING AMPUTATION

Two serious sequelæ of partial amputation of a finger should be kept in mind. The first, the limitation of motion of the proximal joint is caused by failure to utilize the severed tendons. The second is a tender amputation stump which may be due to a tight non-pliable skin flap, a neuroma or perhaps, in case of partial amputation of a distal phalanx, a persisting nail fragment.

Traumatic amputations should be completed as soon as possible as delay enhances the likelihood of infection. The type of anesthetic to be used in the repair of finger injuries is elective. Intravenous sodium pentothal is preferable in our experience. Block anesthesia, induced by injection at the base of the finger, is often adequate. A local anesthetic should not be injected at the borders of the wound because such infiltration devitalizes the tissue and increases the possibility of infection. If an inhalation anesthetic is being administered, cleansing of the injured part should never be undertaken until a state of anesthesia has been induced. The time-honored routine of washing all wounds with tincture of green soap, rinsing with sterile water and ether, before an antiseptic solution is applied, has proved its value. If a tourniquet has been applied it should not be removed until the skin preparation has been completed.

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The anatomical features of all the distal phalanges are similar. Likewise, the middle and the proximal phalanges of one finger are much like those of any other finger. The location of the matrix of the nail and the tendon attachments are all comparable. When one is confronted with a crushed finger, the ideal site for amputation and the arrangement of the skin flap cannot always be chosen, but if a few rules are followed the resulting disability will be minimized. In amputation involving the distal phalanx, the nail base is of much importance. The matrix of the nail extends much farther proximally than is usually recognized. To assure its complete removal, the incision on the dorsum of the finger should be made transversely half way between the cuticle and the major crease which is seen on the dorsal surface of the distal phalangeal joint. The flexor digitorum profundus and the extensor digitorum communis tendons are attached to the shaft near the base of the distal phalanx on the volar and dorsal surfaces respectively. The distal phalanx should be amputated distal to the insertion of these tendons, thus preserving their function. A long palmar flap covering the stump provides adequate padding.

If trauma is more extensive it may become necessary to excise the entire distal phalanx. In this case the knob-like head of the middle phalanx and the cartilage which covers it should be trimmed back. This procedure

lessens the possibility of infection and improves the cosmetic appearance of the stump. The long flexor tendon should be anchored into the stump and a palmar flap utilized if possible.

TENDON INSERTION MUST BE IDENTIFIED

When the site of amputation is through the shaft of the middle phalanx, the tendon insertion must be identified and preserved if possible. The extensor digitorum communis tendon is attached by slips of aponeurosis to the shaft of the middle phalanx near its base. The flexor digitorum sublimus tendon is inserted into the sides of the middle phalanx near the middle of the shaft. In amputation through the proximal phalanx of the thumb, second or third finger, the rule is to save as much of the member as possible.

When a portion of the proximal phalanx of the second or third finger remains, the flexor tendons must be utilized by fixing them into the stump, for, if the patient is unable to carry out complete flexion of the short stump, flexion of the adjacent metacarpophalangeal joints is frequently limited. Ofttimes, instead of leaving a very short stump, it is better to resect the remainder of the phalanx and the metacarpal head. This seemingly radical procedure makes for better function of the adjacent fingers and an improved cosmetic appearance. When amputation is necessary through the shaft of the proximal phalanx of the first or fourth finger, the entire finger should be amputated. When this is done, the incision is placed on the outer side and the head of the metacarpal is resected.

If the digital nerves are resected proximally by sharp dissection, the formation of a neuroma is prevented and the nerve end cannot become fixed in the scar tissue of the stump. Guillotine amputation should be condemned. Terminal and palmar scars are usually tender and are to be avoided.

There is less tissue reaction to linen than to absorbable suture materials. However, if non-absorbable sutures are covered only by the skin they frequently erode through and require removal several months after the stump has healed. The use of fine chromic subcutaneous sutures and linen cuticular sutures is recommended. If interrupted sutures are used to close the skin, they may be removed individually if drainage is needed, or as healing occurs.

Fig. I. Splint in position to protect stump. Notice palmar flaps.

If a vaseline gauze dressing is applied immediately after operation, the first postoperative dressing, which is done in 48 hours, is made much easier. At this time a protective splint is applied. (Figure I). This splint protects the end of the stump and the patient can return to his regular work. A light dressing over the splint allows free circulation of air which dries the stump and facilitates healing. It is important that the dressing be kept dry. Frequently the patient wears the protective splint for several weeks. After healing has occurred the splint is removed each night and the finger is massaged. A massaging motion which stretches the skin distally will improve the circulation and make the skin covering of the stump more pliable.

TREATMENT NOT REQUIRING AMPUTATION

There are innumerable injuries involving the finger tip which do not necessitate amputation. If the nail bed is injured and a subungual hematoma forms, the blood should be evacuated. This is done by drilling through the nail or by loosening the cuticle over the matrix. Should the nail be loosened from its bed but remains attached at its base, it is not removed for several weeks, thus protecting the sensitive nail bed. Another common injury is irregular laceration, the result of a crushing accident. Debridement is done on any frayed edges which are then approximated by suture or with strips of adhesive tape.

Before any finger laceration is sutured the patient should be asked to carry out the various finger motions. If a tendon has been severed the ends should be isolated and carefully sutured. This is of particular importance in treatment of the so-called "baseball-finger" injury in which the extensor digitorum profundus tendon has been severed near the distal interphalangeal joint or has been evulsed from its insertion into the distal phalanx. Improper approximation of the severed ends of a tendon may result in a painful mass at the site of suture. Action of the tendon will be limited if the ends are not brought into apposition. If a short section of a tendon has been destroyed, fascia lata can be used to bridge the gap. If a large portion of the flexor digitorum profundus tendon has been destroyed, the two tendons of the flexor digitorum sublimis may be pulled down and sutured to the deep fascia, thereby re-establishing flexion of the distal phalanx.

STAB WOUNDS AND FOREIGN BODIES

Usually infection does not develop in stab wounds resulting from industrial machinery or from metal that has not been exposed to the weather. However, all stab wounds should be probed or irrigated through and through with sterile saline and a protective dressing applied until the wound has healed. The routine prophylactic administration of tetanus antitoxin is unnecessary, but it should be given in all cases when the wound appears dirty. Small foreign bodies, such as slivers of steel, do not require removal unless they approximate a joint. If removal is deemed necessary, it should be done with the aid of a fluoroscope.

INFECTION

Most superficial infections will clear up with ordinary treatment. If cellulitis is present, measures to bring about localization of the infection must be instituted. These are, rest, elevation, heat and chemotherapy. Incision with adequate drainage should be carried out when localization has occurred. Through and through drainage of a finger is rarely necessary. If warm, half-strength, boric acid compresses are continued after drainage has been established, packing to keep the wound open is unnecessary. Packs or drainage tubes that come in contact with tendon sheaths for any length of time result in disintegration of the sheath and necrosis of the tendon. If there is infection involving the closed spaces around the distal phalanx, an orthodox "fish mouth" incision will open these spaces and assure drainage. Parallel incisions extended proximally from the cuticle promote evacuation in paronychial infections.

SIMPLE FRACTURES

Fractures of the distal phalanx are usually comminuted. When the nail is in place it serves as a splint. If the nail has been removed, circular adhesive tape may be used to splint the fracture and help mold the shape of the finger. A protective splint is used in this type of injury. The workers soon learn of the protection it affords and return to work immediately following the injury.

Simple fractures through the shaft of the middle phalanx can usually be reduced and fixed by flexing the finger over a rolled splint. Remove the dressing at ten-day intervals, then, while supporting the fractured fragments between the thumb and forefinger, manipulate the joints of the fractured finger. One can frequently feel the fibrous adhesion in the joints breaking loose. Removal of the splint before healing has occurred results in a

palmar angulation deformity at the site of the fracture.

In a fracture through the shaft of the proximal phalanx, palmar angulation always occurs. The orthodox method of fixing these fractures over a rolled splint has proven unsatisfactory in our hands. In most cases proper reduction has not been secured. In fractures where proper reduction has been maintained, union has been slow. We believe this is due to the impaired circulation resulting from pressure as the finger is fixed over the rolled splint. If these fractures are reduced under anesthesia and the finger flexed over a long metal splint, the result is gratifying. Adequate traction can be maintained by using small rubber bands, one end being fastened to the splint and the other to a small wire that has been placed through the pulp at the tip of the distal phalanx. A straight skin needle threaded with thin pliable wire can be readily forced through the pulp. The incidence of infection around the wire where it passes through the skin is very low. Pressure on the sides of a finger can be avoided by using a small piece of wood tongue depressor as a spreader between the wires. A small piece of felt is placed between the splint and the finger at the site of the fracture. The splint is fixed to the hand and wrist with plaster.

COMPOUND FRACTURES

A compound fracture of a phalanx should be treated with the same meticulous care as a compound fracture elsewhere. Early debridement followed by reduction and fixation of the fracture should be the aim of the surgeon. Fixation of a transverse fracture of a phalanx as previously mentioned is difficult. In compound fractures where there is considerable soft tissue trauma, traction should be used. It is best applied by the use of a banjo splint. If the first phalanx is fractured, the splint should be applied so as to make the traction on a partially flexed metacarpophalangeal joint. If this is done, the pull normally exerted by the volar interossei muscles is lessened and palmar angulation is less likely to occur. Six to ten weeks are required for union to occur in fractures of the first or second phalanx. The administration of calcium gluconate, we believe, has shortened the time usually required for union. Intensive physical therapy is instituted following union. Heat, massage, active and passive motion and the use of a hand grip will hasten the return of function.

CONCLUSION

The author has attempted to review the treatment of commonly encountered finger injuries. In closing the following points deserve emphasis:

(1) If amputation becomes necessary through any joint, the cartilage should be removed and the knob-like head of the bone should be trimmed back.

(2) Palmar flaps should be utilized to cover the stump, whenever possible.

(3) Points of tendon attachment should be preserved, if possible. If a tendon has to be severed, the proximal end should be sutured to the stump.

(4) Fractures of the proximal phalanges should be reduced under anesthesia, followed by fixation in a position of flexion by means of continuous skeletal traction.

Syphilis Among Selectees

"A rate of 45.2 cases of syphilis per thousand persons examined was found through physical examinations and routine serologic blood tests of the first million selectees and volunteers called for classification under the Selective Service Act of 1940," R. A. Vonderlehr, M.D., and Lida J. Usilton, M.A., Washington, D. C., report in *The Journal of the A. M. A.* for October 18.

"The greatest prevalence of syphilis among the selectees and volunteers was reported by Florida and South Carolina, with rate of 170.1 and 156 cases per thousand respectively," they say. "The lowest rate, of 5.8 per thousand, was reported by New Hampshire. Seven southern states and the District of Columbia reported rates in excess of 100 cases per thousand.

"The rate for Negroes is consistently higher than that for white men in all the states of the union."

DUST AND GASES FOUND IN COAL MINES *

By R. R. SAYERS, M. D.
Bethesda, Md.

IN the earliest written record of mining, "De Re Metallica" (Agricola, 1556), much more than passing mention is accorded miners' sickness that even so long ago appears to have been a commonly occurring hazard to the health of miners. In this treatise (Book VI) Agricola ascribes the illness to dust which "eats away the lungs and implants consumption in the body."

He also describes the bad effects of "stagnant air", a "subtle poison" that escapes from the rocks and infects the air, and says that the workmen "even in the act of climbing from the shafts by the steps of ladders fall back into the shafts when the poison overtakes them. * * *"

In fact, the writer of this early treatise on mining has described a surprising number of present-day hazards. The causes, effects, and remedies that he ascribes may now seem to us rather ridiculous; nevertheless, they apply in many basic ways.

Although the coal miner is not so constantly exposed to the more damaging silica and silicate dusts frequently encountered in metal mining, it is frequently necessary in most coal mines, and almost invariably so in low coal beds, either to take down top rock or take up bottom rock for necessary head room in haulage entries. Here a variety of dusts may result, but most commonly shale or slate occurs in the top and shale or hard clay in the bottom. Drilling, shooting, barring down, or loading these materials exposes not only the workmen so engaged but also others whose duties require them to be in the immediate vicinity or even at greater distances where ventilating air currents can carry the dust.

THE AUTHOR

Dr. Sayers, graduate University of Buffalo School of Medicine, 1914; Senior Surgeon, U. S. Public Health Service, National Institute of Health, Bethesda, Maryland.

However, the dust that we are mainly concerned with in coal mines is coal dust. This arises to a greater or lesser degree in all operations where coal is handled, from the initial operations of cutting, drilling, and shooting to the final operations of dumping the fuel for the consumer and his ultimate feeding of it into stoves, furnaces, and boilers. Naturally, certain of these operations put more coal dust into the surrounding atmosphere than do other operations. Also many varying factors govern, to a large degree, the amount of dust thrown into suspension in air during the same operations in the same bed, in different coal beds, at different mines, or even in different sections of the same mine.

The most important basic factor is whether hand or mechanical mining methods are used. Hand mining, which in former years was the only type of coal mining, is much less dusty than mechanical mining. In fact, the amount of dust raised in hand mining is of relatively little importance in the health and safety of coal miners. However, this condition is quite opposite in mechanical mining operations and, since most of the large mines use mechanical methods and these methods are rapidly increasing in use, that phase is of greatest importance now and seems certain to become even more important in the future.

SOURCES OF DUST

The most dangerously dusty operation in coal mines is dry cutting by mining machines, and top cutting creates a higher concentration of dust in the air than sheaving or under-

*Presented at meeting of West Virginia State Medical Association, Charleston, May 13, 1941.

cutting. Blasting throws large quantities of coal dust into the air, as does shoveling, and especially chute loading, of dry coal.[1] Dry jackhammer drilling and mechanical loading machines also produce larger quantities and, in decreasing order of importance, finally may be enumerated as simultaneous pick mining and loading of coal, loading rock, haulage, and pick mining as additional sources of dust in coal mines.[2]

CONCENTRATION OF DUST

The concentration and amounts of dust encountered in coal mining are governed by a number of factors. If the average air dustiness of working places is considered, few if any, dry coal mines in the United States meet the South African standard of as low as five milligrams per cubic meter of air, or even of the higher 10 milligrams of dust per cubic meter set by Higgins and Lanza in their study of miners' consumption in Joplin, Missouri.[3] Shoveling coal in one mine gave approximately eight billion particles of dust per cubic meter of air at one point, and at numerous other points in the same mine where men were shoveling, from one to five billion particles per cubic meter of air were noted. In another coal mine where an undercutting machine was in use, nearly five billion particles of dust were found per cubic meter of air, and of these over four billion were less than 10 microns in size and therefore possible to breathe directly into the lungs.[3]

HAZARDS OF AIR DUSTINESS

In recent years considerable and widespread attention has been directed to silicosis, and still more recently many investigators have agreed that all dusts may be harmful, at least to the extent that they predispose to tuberculosis, pneumonia, and other respiratory ailments. Generally speaking, coal miners are not exposed to silica dust and hence silicosis as such is not strictly a problem in coal mining. However, the probable effect of coal dust, both from bituminous and anthracite coal, is a problem of great concern. Many investigators have attempted to gather concrete experimental and clinical evidence of the harmful effect of coal and mixed dust incident to coal mining and to correlate the data with particle sizes and concentrations, but it must be admitted that much desirable information is so far lacking. Mavrogordato,[4] Oliver,[5] and Haldane[6] all believed that coal miners were less disposed to lung diseases than other workers because of the inhibiting effect of so-called "inert dusts." Among these are cited coal, hematite, shale, limestone, cement, and clay, and, more recently, aluminum dusts. However, Collis,[7] Bohme,[8] Carleton,[9] and Cummins[10] disagree with this belief and offer somewhat more conclusive evidence to support their own opposing views. Comparatively recent improvements in diagnosis and more thorough investigation of the physical condition of workers in dusty industries have indicated the fallacy of the earlier belief of the beneficial effects of the "inert" dusts, including coal.

Besides the indicated hazards to health, coal dust (except anthracite dust) is capable of initiating explosions in mines, and in its ease of propagation usually contributes materially to the enormous loss of life and damage to property of which we are all well aware, even when such explosions are initiated by gas. Except for the propagating effect of coal dust, most mine explosions would be relatively limited in extent. Therefore, while the complete elimination of coal dust would not prevent all mine explosions, more nearly complete elimination than we now have might reduce them in number and certainly would aid materially in reducing the severity of most coal mine explosions that do occur.

GASES

Although few in number, the gases found in coal mines, and especially those that commonly occur, greatly complicate mine operation and of course create very definite hazards. Besides air (oxygen and nitrogen), those gases that commonly occur naturally are methane, carbon dioxide, and hydrogen sulphide. Along with methane as natural gas there may also occur much smaller amounts of ethane, propane, and butane, but when found

in coal mines in excess of traces these gases are regarded as evidence of leaks from oil or gas wells.

In addition to the gases already mentioned, others occur in coal mines either as a direct result of mining coal or indirectly when fires or explosions occur. In blasting, the gases so liberated are known as "explosives gases" and, depending upon the explosive used and other conditions, these gases may vary widely in composition. Mainly they are oxides of nitrogen, sulphur dioxide, carbon monoxide (white damp), carbon dioxide, and smoke. Mine fires and explosions create oxygen-deficient atmosphere that also contain dangerous amounts of carbon monoxide. Such atmospheres, characterized by high nitrogen, commonly are called "after-damp" and, depending upon the concentration of the toxic carbon monoxide and asphyxiating high nitrogen content, or both, these atmospheres usually are irrespirable.

When the explosive gas methane occurs in coal mines, at all working places where the gas is emitted or may accumulate, sufficient air volumes should be maintained to dilute the gas below its lower inflammable limit of about five per cent. In practice, most state mining laws and other safe procedures require or suggest that ventilation be sufficient to dilute the gas far below this minimum value.

METHANE

Methane is commonly called "fire damp", but that term is applied more properly to a mixture of methane and air. It is not dangerous to health except as a diluent of oxygen, but is a continuous explosion hazard. Many coal mines are classed as "gassy" and when so classed have special regulations to safeguard operation. Others, known as "non-gassy" mines, usually are permitted to operate under much less strict regulations. However, methane gas is often found at times in many such mines and there can be no assurance that it may not occur in dangerous amounts at any time in the future. Since it is a colorless, tasteless, and, when pure, an odorless gas, no warning of its presence may be noted except by the use of a flame safety lamp or special detection apparatus.

CARBON DIOXIDE

Carbon dioxide is commonly called "black damp" but, like fire damp, that name properly denotes oxygen-deficient atmospheres in which carbon dioxide, nitrogen, and other gases also occur in abnormal concentrations. This gas is a product of organic decomposition and its occurrence in coal mines under normal conditions is due to absorption or absorption of oxygen by coal, timbers, men, animals, and open lights, and the liberation of carbon dioxide by these agencies.[11] Traces of carbon dioxide are always a part of normal air, but larger amounts are taken to indicate the relative impurity of mine air. It is a colorless and odorless gas, but high concentrations impart an acid taste when inhaled. The physiological effect of carbon dioxide is to increase lung ventilation. This effect is noted with as little as 0.5 per cent carbon dioxide in air and increases directly with increasing percentages of carbon dioxide so that 10 per cent of this gas in air can be endured for only a few minutes.[11] While beneficial in certain percentages in artificial respiration, its presence in coal mines and other low spots is frequently asphyxiating.

HYDROGEN SULPHIDE

Because of its striking and characteristic odor, hydrogen sulphide is known to miners as "stink damp." The odor is best described as that of rotten eggs and, in fact, the presence of this gas is what imparts the unpleasant odor to eggs in that condition. Hydrogen sulphide is produced by decomposition of organic material out of contact with air and is not often found in coal mines except in very low concentrations from burning explosives containing sulphur and rotting timbers. However, it is often found in large amounts in the gas and oil producing industries, and in recent years has been encountered in a few coal mines in troublesome amounts,[12] where it apparently has been evolved directly from

the coal. As little as 0.005 to 0.010 per cent of hydrogen sulphide will cause subacute poisoning with mild conjunctivitis and irritation of the respiratory tract after one hour of exposure, and 0.10 to 0.20 per cent will result in rapid unconsciousness, cessation of respiration, and death in a few minutes. Even as low a concentration as 0.10 per cent of hydrogen sulphide may cause death after long exposure. Fortunately, the rare occurrence of this gas in dangerous concentrations in coal mines and its strong odor prevent it from becoming a problem in any but a few coal mines, but since low concentrations gradually deaden the olfactory nerves and high concentrations are said to have no odor,[13] the sense of smell alone is not always dependable as a means of warning of dangerous concentrations of hydrogen sulphide.

OXYGEN-DEFICIENT ATMOSPHERES

Atmospheres containing insufficient oxygen for proper work or even so low in oxygen as to cause death are by no means unusual in mines. The latter condition usually results during or after mine fires and explosions or in unworked and unventilated underground areas, but other things may occur to cause this or a less acute condition; for example: a sudden roof fall extending over a considerable area that forces out air from an unventilated section of the mine; short circuiting the normal air current by opening a mine door or to have such a door knocked down; roof falls or other obstructions in ventilating airways; and, of course, improper ventilation methods, including too small or inefficient fans or the complete lack of them.

Under certain conditions men can survive in very low oxygen concentrations (3.5 per cent) for considerable lengths of time, but relatively small oxygen deficiencies result in inefficient and more labored activity. Sudden loss of consciousness may result from less oxygen than nine per cent and most persons become dizzy, have a rapid heartbeat, and often suffer from headache when oxygen is as low as 15 per cent.

EXPLOSIVE GASES

Gases resulting from blasting in coal mines, except the oxides of nitrogen and carbon monoxide, can seldom reach concentrations sufficiently high to cause trouble and probably would never cause such trouble if sufficient time were permitted to elapse between blasting and return to the working place. For this and other reasons blasting in coal mines should be done "off shift" if at all possible and only by shot firers.

If explosives contain properly balanced components they usually produce only traces of oxides of nitrogen, which are considered harmless.[11] But some high explosives, even when fired under proper conditions, do give off harmful amounts of these gases. As little as 0.01 per cent of nitrogen peroxide (NO^2) may cause serious illness if breathed for a short time, and 0.07 per cent is fatal if breathed for 30 minutes.[11] The greatest danger from breathing oxides of nitrogen lies in their delayed action, which may cause edema and swelling of the respiratory passages only after several hours, and the irritation predisposes the victim to bronchitis or pneumonia, frequently with fatal results.

Carbon monoxide is another of the dangerous gases from improper methods of blasting or the use of improper explosives, but is encountered mainly in dangerous amounts during or after mine fires and explosions. Much information has been made available over a long period of time concerning the symptoms and effects of carbon monoxide poisoning. Therefore it seems unnecessary to repeat such information in detail.

Although known to miners as "white damp", that term is misleading because the gas is colorless. It is also odorless and tasteless and, like some other dangerous gases, gives no warning of its presence until the characteristic symptoms appear, which often is too late to avoid serious results or even loss of life. The symptoms of carbon monoxide poisoning are: first, tightness across the forehead; second, headache and throbbing in the

temples; third, severe headache, weakness, dizziness, nausea, and possible collapse through syncope, coma with convulsions, and death by respiratory failure. The most accurate measure of degree in carbon monoxide poisoning is determination of percentage of blood saturation, which is most readily made by use of the pyrotannic acid method, and possession and use of this equipment is suggested wherever carbon monoxide poisoning is likely to be encountered. Since such poisoning frequently occurs in many industries besides coal mining and in homes and garages, it is therefore widespread in occurrence and at least one reliably accurate carbon monoxide testing outfit should be readily available for use in suspected cases. Prompt diagnosis and oxygen administration are essential in severe cases to lessen as much as possible the damaging effects of carbon monoxide poisoning.

CONCLUSION

Dusts, especially coal dust, are an ever-present hazard in practically all bituminous coal mines and, at least from the standpoint of health, in anthracite coal mines, unless special measures are employed to prevent these dusts from being put into suspension in air, and in most cases also to render coal dust harmless from the explosion standpoint by the proper use of rock dust.

Gases that normally occur in coal mines in dangerous concentrations are largely limited to methane, from the explosion hazard, and to low oxygen or high carbon dioxide and high nitrogen that are enervating or asphyxiating. Together with explosives gases that sometimes are harmful, remedial measures and safe operation of coal mines require positive and adequate air volumes for proper dilution of these gases and, since this may be impracticable at all points where methane is liberated or accumulates, additional safeguards in the use of electricity, explosives, or other means of ignition are mandatory. Most of these precautionary measures are well known, but unfortunately are not so generally used as the conservation of life and property would seem to dictate.

Investigations to determine concentrations and physiological effects of coal mine dusts and gases constitute one of the important functions of the Bureau of Mines, United States Department of the Interior.

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12. Emily and adjacent mine in West Virginia, 1937, and Bairdford in Pennsylvania, 1939. (R.D.L.)

13. Whether they actually have no odor or the sense of smell is paralyzed too quickly to respond is not known.

Occupational Fungous Disease

Prompt diagnosis and treatment are essential in cases of sporotrichosis, an occupational fungous disease, Frank M. Gastineau, M. D.; Louis W. Spolyar, M. D., and Edith Haynes, Ph.D., Indianapolis, point out in *The Journal of the A. M. A.* for September 27 in a report of six cases among florists.

The causative fungus is called Sporotrichum schencki. The disease chiefly affects agricultural manual workers and tends to be disabling and chronic if not diagnosed early. The authors point out that if the disease is not diagnosed early the victim "undergoes an economic loss out of proportion to his disease."

MEDICINE IN MUSIC

By W. R. WIANT
Charleston, West Virginia

ONE of the things I never expected to do was write a paper for the West Virginia State Medical Association, or any other medical group. I am not a doctor; not even of music; no college has yet decided to bask in the light of reflected glory and give me a Mus. D. My relation with doctors has been entirely that of the patient. Nevertheless, I welcome the opportunity to write, for I know from first hand knowledge, some of the uses of music both in preventive and curative medicine.

For nearly three years I conducted the Federal Orchestra in Huntington, West Virginia, prior to coming to Charleston. Part of the duties of that orchestra consisted in regular appearances at the Orthopedic Hospital and at the State Hospital for the Insane. Those appearances were not for the purpose of finding places for the musicians to earn their salary; they were part of a very definite plan to aid in curing the patients.

It was necessary to select music that would aid in this cure; solemn music, no matter how beautiful, was out of the question. We strove for brightness, gaiety, and inspiration, with an occasional note of restfulness, but not too much of the last. A child who is flat on his back with a twisted spine for months does not need restful music; he wants something with life. So for the children and adults at the Orthopedic Hospital, we played a lot of marches, overtures and the like, with a liberal supply of comedy. For the patients at the State Hospital, we used an abundance of dance music; hill-billy and modern jive, with seasoning of comedy numbers and marches.

At both institutions, the patients could hardly believe their eyes when the orchestra came in, set up, and began to play. Eyes lit up; faces that had been set with pain looked with interest at the orchestra; lips that had not smiled for weeks were now lifted at the funny songs of our comedians and the comic numbers we devised with the players. The feeble-minded could imagine they were at a formal ball, or else envision themselves part of a grand cortege for the three marches we always played at the State Hospital. They followed all the publicity and the careers of the individual players with avid interest; they knew if a musician had on a new tie or a pair of shoes, and best of all, they went back to their rooms with minds that had been brightened and lifted out of themselves by the power of the music.

Statistics which can be furnished by the orthopedic staff will show a decided gain in the rapidity of cures when the orchestra played there. I shall always remember one little boy; he was about nine then. Both legs were useless from poliomyelitis. He was intensely interested in the orchestra, and he would follow us with his eyes at first, for he could not even sit up. Then he became able to sit up in bed when propped; then in a chair, and he finally was able to stand if someone held him. When that stage arrived, I would carry him over to the orchestra, stand him on my podium, and hold him while I waved his right arm holding my baton to lead the orchestra. This "guest conductorship" continued for about two years, with gradual but steady improvement in his condition. The day when he could stand in front

THE AUTHOR

Mr. Wiant, conductor of the Charleston Civic Orchestra, born Moundsville, 1902; has had 25 years professional experience in theatres, dance bands, choral groups, concert and symphony orchestras.

of the orchestra without any help was almost as proud for me as for him. Now he is cured, and I like to feel the music helped him in no small way to effect that cure.

We have no such hospital in Charleston, but we do have a civic orchestra that can minister to the city's musical needs, and among the things this group might do, and would, if given the essential financial backing, is to give at least one concert a year to those in hospitals. The procedure has been successfully followed elsewhere, and when one considers the tremendous emotional force inherent in good music; how it can arouse, soothe, anger, quiet, inspire, and if we are to believe rumor, even incite to murder and suicide, we are letting an opportunity slip when we fail to make music available to our sick. To those who doubt, I suggest going through a hospital with a group of Christmas carolers, and watch the reactions of the sick ones. Think, then of what a symphony orchestra might aid you gentlemen to accomplish.

Medicine, surgery and nursing have the most important parts in the drama of the prolongation of life, but there is a spot in the inside of every man's soul that cannot be reached by the tangibles. And to fill that place, to give that man the will as well as the chance to get well, I offer you the healing agency and ministry of music.

Sulfanilamide During Pregnancy

The administration of sulfanilamide during pregnancy is not without danger to the baby because of the rapidly attained similarity of levels of the drug in the blood of the mother and the fetus, George P. Heckel, M.D., Rochester, N. Y., reports in *The Journal of the A. M. A.* for October 18.

This warning is based on the findings in 13 mothers who received sulfanilamide or its derivatives during pregnancy. A severe anemia in the infant of one of them at birth suggests fetal injury from sulfanilamide. However, unless an infant is unusually sensitive to sulfanilamide there is little likelihood of injury from the amounts of the drug obtained in the milk from the mother.

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

Mortality from tuberculosis has been quartered in forty years. This fact, however, reveals no accurate information regarding prevailing infection and morbidity rates. That they are less is too logical a deduction to be doubted, but their decline relative to that in mortality has been a matter of conjecture. The following report on autopsy findings throws valuable light on this question, especially since accurate studies extending over the past half century furnish the needed controls for comparison.

Prevailing Tuberculosis Infection Rate

In 1900 Naegeli published a careful report of 508 autopsies. Of the adults over 18 years of age 93 per cent showed healed, inactive or active tuberculosis lesions in the lungs. Only 17 per cent of those under 18 yielded positive findings. Other investigators substantiated these findings and in the early years of this century the belief was prevalent that all adults had at some time suffered an invasion by the tubercle bacillus.

Opie as late as 1917 found positive evidence of infection in all of 50 autopsies on adults and in nearly 24 per cent of a group of 93 children, the latter showing a far higher figure in the adolescent years. It was these findings that led Opie to remark, "Almost all human beings are spontaneously 'vaccinated' with tuberculosis before they reach adult life."

In 1922 Wason reported positive findings in 82 per cent of his autopsies and in 1925 Lambert and de Castro Filho reported a rate of 72.8 per cent in a large series from Brazil. As late as 1927 Todd still found evidence of tuberculous infection in 69 per cent of autopsies done in Edinburgh on patients who had died of some cause other than tuberculosis. Such evidence indicates rather clearly that decline in infection rate has not kept pace with mortality from this disease.

The present study was carried on at the Washington County Hospital in Hagerstown from September, 1938 to August, 1940, all autopsies being performed by the same pathologist. There were 176 autopsies during this period which represented 45 per cent of the deaths which occurred. Eleven of these were rejected because they were not complete postmortems leaving 165 which are

(Continued on page xxvi)

President's Page

During the next few months, a number of experimental plans will be tried out in West Virginia with reference to rendering medical treatment to indigent clients of the Department of Public Assistance. The Council authorized the Association's D. P. A. Advisory Committee to cooperate with the Department of Public Assistance in carrying out this experimental work, with the proviso that nothing would be attempted in any county of the state without the approval of the county medical society involved.

We feel this is a fair and square proposition and we hope our county societies will feel perfectly free to work with our Advisory Committee and the Department of Public Assistance in attempting to find a better arrangement for D. P. A. medical service. The present system, which involves more red tape than the average physician is willing to fool with, was worked out some eight years ago when public medical care for the indigent was in its infancy. While the present plan is partially satisfactory in some localities it is far from satisfactory in others according to complaints which come in from both physicians and patients. We feel the time is ripe for West Virginia to again experiment in this field where we have already done a great deal of pioneer work.

Doctors may be inclined to feel that this is another step in the direction of state medicine. What many of us fail to realize is that our indigent medical service program is state medicine and we have been promoting it for a number of years. Our present concern is not state medicine, which we already have; but what is the best way to administer state medical relief funds so that prompt and efficient medical service can be rendered under the program.

We have already had a few variations in our present system of medical relief. Several years ago the Ohio County Medical Society worked out a plan with their county D. P. A. board whereby the society employed some four or five of their own members to handle all medical relief calls. Salaries were paid through the society by the County Department of Public Assistance. This plan still prevails in Ohio county and we understand it is satisfactory with both doctors and patients. If it isn't, it can be changed at any time by the society. The Marion County Medical Society is now considering another variation whereby some six or eight physicians will be designated to take care of all relief cases. We don't know whether such a plan is good or bad. We do know that it's a good idea to make a practical test, under county society control, and find out.

Our State Medical Association and our State Department of Public Assistance have attracted national attention on more than one occasion for pioneering in the field of indigent medical service. Now we have another opportunity to explore. Ideas and suggestions will be welcomed. On behalf of our Association's D. P. A. Advisory Committee, may I request an attitude of helpfulness and cooperation toward this new approach to the old and troublesome problem.

Robt. C. Burford

President

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MEDICAL DEFERMENT

The deferred status of medical students and internes is a subject of frequent discussion in medical circles. This entire problem was so ably discussed in the October 18 issue of the *Journal of the American Medical Association* that we are republishing the complete text of the *J.A.M.A.* article. It follows:

"When it became apparent in June, 1940 that the medical profession would be required to provide the Army, the Navy and the Public Health Service with a considerable number of physicians to meet the needs of the preparedness campaign, medical leaders with foresight urged the deferment of medical students and internes who might be called up under the Selective Service Act. Almost every agency connected with medical education took an interest in the problem. Eventually, as has been previously published in the *Journal*, arrangements were made to defer medical students and internes. Moreover, opportunity was provided for official enrollment of junior and senior students in the War Department Reserve Pool, thus permitting them to continue their education and making them available for military service as medical officers after their medical education and interneship had been completed. Unfortunately, a relatively small percentage of the medical students in the junior and senior years have accepted appointment to the Medical Administrative Corps, which would make them available in the War Department's Reserve Pool. As a result, a situation impends which is giving the offices of the Surgeon Generals of the Army and Navy great concern. Obviously they must plan for a continuous supply of medical officers for at least the five year progam contemplated by the Selective Service Act.

"If the young men who are attending the medical colleges at this time persist in avoiding military service, the Army will not have the medical personnel that is required. The folly of the medical students who have failed to avail themselves of the opportunity offered to them is so obvious as to cause wonderment. At any time, under the Selective Service Act, deferment could be discontinued. If the needs of the Army demand such discontinuance, every medical graduate could be called at the moment he graduates or before. The present situation in which medical students are permitted to have continuity of medical education and interneship before being called into military service was achieved only with immense effort and by favorable consideration on the part of representatives of the Army, the Navy, the Public Health Service, the Health and Medical Committee, the Committee on Medical Preparedness, the Association of American Medical Colleges and innumerable other agencies working with the National Selective Service. The representatives of the National Selective Service, including the director and his medical advisory staff, have had utmost sympathy with the importance of deferment of medical students so as to provide continuity of medical education. So far as we can learn, not more than four or five students in good standing in medical schools of repute in this country have been inducted into the military service.

"Now the failure of the student to cooperate as he should may bring about a situation in which all of the planning will be put to naught. Failure of students to apply for commissions as second lieutenants in the

Medical Administrative Corps or as ensigns in the Navy may place on the deans of medical schools the responsibility for their actions, so that deans will be compelled to discontinue recommendations for deferment for junior and senior students. Moreover, internes and residents constitute the pool from which the Army must expect to draw replacements for medical officers in the next two years. If these groups do not come into the reserve corps, medical reserve officers now in the Army will be held for prolonged service. Here a responsibility rests on superintendents of hospitals. Deferment of residents or internes beyond one year should not be requested unless the physician concerned cannot be replaced and unless his withdrawal would be a serious handicap to the service of the institution.

"An appeal to the patriotism of the medical student should in itself be sufficient to cause promptly a favorable response. Always it has been the proud boast of the medical profession in the United States that it was never found lacking when the nation called. In every conflict in which our nation has been engaged, thousands of physicians have rushed to be among the first to give of their services. The preparedness of the nation is vital to its future safety. The threat that a display of lack of patriotism will result in prompt action by the government in discontinuing deferment should make even the unpatriotic see the logic of offering the fullest cooperation by enrollment in the War Department's Reserve Pool at this time."

W. VA. PHYSICIANS ATTACKED

West Virginia physicians are again attacked in the October 16, 1941 *Bulletin* of the West Virginia Coal Association. Under the heading "Semi-Socialized Medicine," the *Coal Bulletin* berates one of our doctors for endorsing the purchase of the Old Sweet Springs property in order to get "new business for the profession," and then launches into a discussion of medical awards by the Workmen's Compensation Department. The *Bulletin* further points out that the doctors receive more than $500,000 annually from relief funds, and then comes several disgruntled statements such as "the squatters up the creeks are not the only recipients of relief money."

We'll try to discuss this *Coal Bulletin* without getting mad.

The chief reason we cite the above from the *Coal Bulletin* is to let our members know that the coal folks are gunning for something. What that is, we do not know. We can easily figure out that it pertains to contract practice. We imagine that it is somehow tied up with our legislative act divorcing compensation cases from hospital list practice. Whatever it is, we hope our members engaged in industrial practice will be on their guard against any new proposition that may tend to lower the standard of medical practice in West Virginia.

It is very difficult to keep from answering some of the specific charges made in the October 16 *Coal Bulletin*. It takes determination, for example, to refrain from pointing out that hospitals received approximately 60 per cent of the above quoted, "$500,000 annually from relief funds." It takes a little will power to keep from asking the coal people how the establishment of a tuberculosis sanitarium in Monroe county could possibly get "new business for the profession." These things are pretty ridiculous, of course, but any discussion of the merits or demerits of the *Coal Bulletin's* charges would simply get us off the track.

We could concede (which we do not) that every charge made in the October 16 *Coal Bulletin* was true and still have enough argument left over to ask why the coal people go out of their way to attack us in an unrelated issue in their trade publication. We believe this attitude is typical of a reactionary diehard group that is still trying to do business on a 1921 scale. We honestly feel that some of the coal people, having resisted every pro-

gressive step forced on their industry in the past fifty years, are still struggling with problems which the rest of us settled some 10 or 12 years ago.

We go on the theory that a big majority of American people are honest. This includes doctors and coal operators. The coal association could get a lot further in working out some of our mutual problems if they would make some approach to this same theory. Of course when they get off in their corner and start calling names, our general tendency is to hurl insult for insult.

We note in the same October 16 *Bulletin* that coal production has already gone far beyond the 1921 peak. This is good news. We extend our heartiest congratulations to our coal friends for this splendid achievement and hope they continue to keep West Virginia in the vanguard of the nation's coal producing states.

COMMITTEE CHANGES

The changes in the personnel of two important Association committees have recently been announced by Dr. R. O. Rogers, president-elect, and Dr. Robert King Buford, president, who worked together in working out the changes.

Dr. Robert J. Reed, Jr., 100 Twelfth Street, Wheeling, has been appointed a member of the Committee on Scientific Work to take the place of Dr. R. J. Condry, Elkins, who was recently called to active duty in the United States Navy. Dr. Condry is now Lieutenant Commander R. J. Condry, U. S. Naval Hospital, Brooklyn, N. Y. The Scientific Committee, which has charge of the program for the 1942 meeting, is now composed of Dr. Reed, Dr. A. E. Amick, Charleston, chairman, and Dr. Wade H. St. Clair, Bluefield.

The other change is in the Syphilis Committee. Dr. C. O. Reynolds, Bluefield, has been named to take the place of Dr. W. M. Sheppe, Wheeling, who has also been called to active duty in the Navy. Dr. Sheppe is now at the U. S. Naval Hospital, Quantico, Virginia. The chairmanship of the committee has been given to Dr. Boyd F. Brown, Huntington, who has served as a member for the past several years.

A successor has not yet been selected for Dr. William A. Wallace, Martinsburg, who recently resigned from the Association's Cancer Committee while taking a year's postgraduate work at Harvard.

OUR PHYSICIAN POPULATION

There may be an oversupply of physicians in other parts of the country, but that is not the case in West Virginia. There has hardly been a time in the past two or three years when openings were not available for capable and qualified young physicians. Today, with more than 100 of our doctors already called to active duty in the Army and Navy, we could handily place a couple of carloads of younger men if they were available.

Contrary to general belief, the growth of the medical population in West Virginia has been slow and has not kept pace with the general increase in population. For example, from 1930 to 1940 there was an increase of only 52 licensed physicians in the entire state. The number increased from 1,782 in 1930 to 1,834 in 1940, an average of slightly over five physicians per year. During this same period the membership in the West Virginia State Medical Association increased from approximately 1,100 to 1,300 physicians, which no doubt contributed to the general impression that there had been a large increase in the total medical population of the state.

New physicians are continually being licensed in West Virginia. More than 75 new doctors have located in West Virginia in 1941 and this number will probably increase to 100 before the year is out. During this same period, however, some 100 physicians will be lost through retirement and death and an additional 100 or more have already entered military service. This decline in physician

population creates a definite problem in the face of the rapid increase in the general population of the state during the past 18 months.

Many physicians, particularly in industrial practice, have doubled up to cover their confreres in the service. If there can be more of this, it will not be necessary to bring in a large number of outside physicians to take care of our own people. We hope and feel that every Association member will work with renewed vigor toward the goal of providing adequate medical service to all the people of West Virginia.

THE REEVES MONUMENT

The Reeves monument at Rivesville is back with us again; this time in the form of a request from Mayor Fred T. Wilson of Fairmont to Road Commissioner Earnest L. Bailey to help out in moving the Association's marker to Fairmont. It is proposed to re-erect the monument on the grounds of the new Fairmont Hospital. We can best bring Association members up to date on the Reeves monument misunderstanding by quoting portions of Mayor Wilson's letter to Commissioner Bailey, as follows:

"Several years ago the West Virginia State Medical Association erected a monument in the Town of Rivesville in memory of Dr. Reeves, founder of the State Medical Association. This monument was erected in Rivesville because it was thought at that time that Rivesville was named for Dr. Reeves and that was Dr. Reeves home at one time. Later, historical records revealed that Dr. Reeves did not, at any time, live in Rivesville but did live in Fairmont. It was further discovered that the Town of Rivesville was named to honor Henry C. Rives, (note difference in spelling) a Virginia congressman whose influence obtained the town's first post office.

"Upon discovery of this mistake, in 1940, Dr. C. O. Henry of this city suggested that in view of the fact that Dr. Reeves lived in Fairmont and that he instituted the West Virginia State Medical Association in this city, that Fairmont was the proper place for the erection of this monument. * * * Therefore, after taking this matter up with the Marion County Medical Society and getting their unanimous approval to move the monument, I appealed to the West Virginia State Medical Association. * * * Thereupon, at their 1940 convention, it was approved subject to satisfactory arrangements with the town government of Rivesville * * * just recently the mayor and council of Rivesville expressed their willingness to cooperate to the satisfaction of the State Medical Association.

"It is our desire to erect this monument on the grounds of Fairmont's new hospital. * * * We are wondering if the State Road Commission would either move and re-erect this monument or erect another monument suitable for the bronze plate. Anything you may be able to do in this connection, I am sure will be greatly appreciated by the West Virginia State Medical Association as well as the City of Fairmont."

Acute Mastoiditis

A new procedure in the operation for acute mastoiditis wherein sulfanilamide or sulfathiazole crystals are placed in the cavity after the operation and the wound then tightly closed instead of the usual procedure of leaving therein a rubber drainage tube, is reported in *The Journal of the A. M. A.* for September 27 by George S. Livingston, M. D., Chicago.

The procedure was used in 13 cases, he says, and the experience gained "shows that it is entirely feasible to close a mastoid wound without drainage if the cavity is filled with sulfanilamide or sulfathiazole. In nearly all the cases the wound healed in a remarkably short time and the long tedious period of dressings was eliminated. The absence of local inflammatory reaction indicates not only that there is a prompt elimination of infection but also that the drugs have no adverse effect on the tissues."

Dr. Livingston says there was no significant difference between sulfanilamide and sulfathiazole but that future experience may favor the use of the more recently synthesized sulfonamide compounds.

General News

Council Meeting

The Council of the West Virginia State Medical Association met in the Association headquarters, Room 302, Atlas Building, Charleston, on October 9, 1941. The meeting was called to order at 10:30 a. m. by Dr. Frank V. Langfitt, chairman.

Those present were: Drs. Langfitt, Robert King Buford, president; R. O. Rogers, president-elect; D. G. Preston, vice president; M. H. Porterfield, councillor-elect; Councillors A. P. Butt, Jr., H. L. Goodman, Ray M. Bobbitt, L. W. Deeds, Raymond Sloan, J. C. Peck, George W. Easley, J. B. Clinton, Frank Holroyd, C. B. Pride, and T. M. Barber, treasurer. Others present were Drs. R. J. Wilkinson, and E. J. Van Liere of the Committee on Medical Education; Dr. Walter E. Vest, Journal editor, and Mr. Joe W. Savage, executive secretary.

The minutes of the preceding meeting were read and accepted on motion of Doctor Sloan.

Dr. Wilkinson then made a very complete report on the work carried on during the past summer by the committee on medical education. This was a most complete and instructive presentation. Additional details and viewpoints were furnished by Dr. Van Liere and Dr. Langfitt, the other two members of the committee. Following a long, vigorous and enlightening discussion, the Council adopted the following recommendation:

1. That the two-year medical school at Morgantown be continued and that the facilities be increased to the end that this will be the outstanding two-year medical course in our country.

2. That the plan referred to wherein the students can be placed at one of the two existing institutions adjacent to West Virginia be adopted.

3. That the diplomas received by these students shall show that they are graduating from the University of West Virginia as well as from the school giving the two years of clinical work.

4. That the state hospitals at Fairmont and Welch be closed and the funds used in their maintenance be transferred to the West Virginia University to take care of a four-year medical training for our West Virginia boys without imposing an additional tax upon the citizens of our state.

5. That a copy of these recommendations and the reports of the Committee on Medical Education be submitted to the Board of Governors of West Virginia University and to the governor of our state.

On motion of Dr. Sloan, Dr. D. P. Kessler of Weston and Dr. H. M. Campbell of Parkersburg were elected to honorary membership in the Association.

The Council next considered the work of the past two years by the Woman's Auxiliary in compiling pictures and biographical data of the Association's past presidents. In recognition of this splendid work, Dr. Bobbitt moved that this historical data be published in pamphlet form to be used and distributed in connection with the seventy-fifth annual meeting of the West Virginia State Medical Association at White Sulphur Springs next July. This motion prevailed.

On motion of Dr. Goodman, duly seconded, Mr. Savage was authorized to purchase suitable floor covering for the Association offices, 302 Atlas Bldg., Charleston, and to use his own judgment in regard to the material to be selected.

The meeting recessed at 12:30 p. m. to the Daniel Boone Hotel where luncheon was served. Council reconvened at the Daniel Boone at 2:00 p. m. Dr. Langfitt introduced Dr. Clifton F. McClintic, state health commissioner, who spoke briefly and expressed appreciation for the splendid cooperation which he had received from the medical profession.

On behalf of the State D. P. A. Advisory Committee, Mr. Savage requested that the Council back up the committee in experimenting with different plans for county medical relief programs. Dr. Barber moved that the Council approve this suggestion of the D. P. A. Advisory Committee, which motion was duly seconded and carried. It was agreed that no plan would be attempted in any county without the consent and approval of the county medical society.

After remarks by Dr. Buford with reference to chest surgery in West Virginia, it was moved by Dr. Bobbitt that Dr. Buford be empowered to discuss the entire matter of thoracic surgery with the West Virginia Board of Control.

On motion of Dr. Bobbitt, Dr. Buford was authorized to act for the Association in regard to a statewide radio program for blood donors for indigent patients. This motion was seconded and carried.

Dr. Bobbitt stated that Mr. Savage, executive secretary, had been asked to serve as organization

consultant to the National Foundation for Infantile Paralysis for the next year. Dr. Bobbitt stated this would take approximately two days each month of Mr. Savage's time and moved that the Council allow Mr. Savage to accept this offer. This motion was duly seconded and carried.

There being no further business to come before the Council, the meeting adjourned at 3:00 p. m.

JOE W. SAVAGE,
Executive Secretary.

The Simon Case Again

On October 10, the United States Circuit Court of Appeals for the Fourth Judicial District, in session at Richmond, Va., upheld the verdict found in the United States District Court at Huntington in which Dr. S. M. E. Simon was convicted on seven counts charging the concealment of assets in a bankruptcy proceeding and false swearing incident thereto. He was sentenced to three years in a Federal prison and fined $3,000.00.

Dr. Simon is still out on bond. He may now accept the finding of the United States Circuit Court, he may appeal to that tribunal for a rehearing, or he may appeal to the United States Supreme Court.

State Health Meeting

The annual meeting of the West Virginia State Health Conference will be held in Charleston, November 17 and 18, with headquarters at the Daniel Boone Hotel. This conference will bring together health workers and those who are interested in safeguarding the health of the public in West Virginia.

National and state authorities will discuss a need for strengthening public health. The speakers include: Dr. R. H. Riley, state health commissioner of Maryland; Dr. E. R. Coffey, assistant surgeon general, United States Public Health Service; Dr. E. G. McGavran, director, St. Louis County Health Department, Missouri; Dr. Carl Buck, field representative, American Public Health Association; Miss Naomi Deutsch, director, public health nursing, Children's Bureau, United States Department of Labor; J. J. Bloomfield, sanitary engineer, United States Public Health Service; F. W. Kittrell, engineer secretary, Interstate Commission on Potomac River Basin; Miss Marjorie Gooch, Children's Bureau; Raymond Kenny, director, Department of Public Assistance.

One of the highlights of the conference will be the meeting on Monday evening at which Dr. R. A. Vonderlehr, assistant surgeon general of the United States Public Health Service will discuss, "West Virginia Against Venereal Diseases in 1941."

Dr. C. F. McClintic, state health commissioner, will preside at the opening session on Monday morning. The meeting will close with a banquet and dance on Tuesday night.

Medical Society of Virginia

Dr. J. M. Emmett of Clifton Forge, Virginia, was named president-elect of the Medical Society of Virginia at their meeting at Virginia Beach, October 6-8, 1941. Dr. Roshier W. Miller of Richmond was installed as president for the ensuing year. Dr. Emmett will be remembered as the chairman of the Golf Committee, and Dr. Roshier Miller as banquet toastmaster, at our joint meeting with the Virginia Medical Society at White Sulphur Springs in 1940.

Dr. James K. Hall, Richmond psychiatrist, was named president-elect of the Southern Psychiatric Association.

Southern Medical Meeting

The St. Louis meeting of the Southern Medical Association will be their thirty-fifth annual meeting, and will be held November 10-13, 1941. A large number of West Virginia physicians will attend this meeting which is noted for the excellent scientific program and wide scope of medical activity.

Clinical sessions by St. Louis men will begin on Monday afternoon and last until Tuesday noon. There will be nineteen section meetings from Tuesday noon until Thursday, the last day, and the scientific and technical exhibits, in addition to the vast entertainment program, promise one of the finest meetings they have held to date.

St. Louis is well equipped to handle a large group of visitors. Only the Jefferson, official headquarters hotel, is already filled. Other good downtown hotels such as the Statler, DeSoto, Mayfair, Mark Twain, Lennox, Claridge, American, Majestic and Warwich, have ample rooms at reasonable rates. Those who have not yet obtained rooms should write to Hotel Committee, Southern Medical Association, 910 Syndicate Trust Bldg., St. Louis, Mo.

Sex Education Pamphlets

The Association's library in Charleston is recently in receipt of a number of new pamphlets and reprints from the American Medical Association which are intended for the use of physicians with their patients. Single copy prices range from five to fifteen cents. Quantity prices will be furnished upon request. Write the American Medical Association, 535 North Dearborn Street, Chicago, for information on any of the following:

"Sex Education for the Preschool Child," 15 cents per copy; "Sex Education for the Ten Year Old," 15 cents per copy; "Sex Education for the Adolescent," 15 cents per copy; "Sex Education for the Married Couple," 15 cents per copy; "Sex Education for the Woman at Menopause," 15 cents per copy; "Encouraging Aspects of Cancer Control," 10 cents per copy; "Visual Efficiency," five cents per copy.

Army Medical Library

On September 24, the president approved a bill, H.R. 5146, authorizing an appropriation of $4,750,000 to construct a new building for the Army Medical Library and Museum and to purchase a site on which to construct the building (Public Law No. 256, 77th Congress). The Seventy-fifth Congress, in 1938, authorized an appropriation of $3,750,000 for the new building but failed to make any provision for the purchase of a site, it being then contemplated that the new structure would be built on property already owned by the Federal Government. A suitable government owned site, however, could not be found and it was necessary for Congress specifically to authorize the acquisition of a new site which it did in the law recently signed by the president.

While this bill has already been signed by the president and is now law, the money authorized by it must yet be actually appropriated by the Congress before a site can be acquired and the building constructed. Ordinarily when Congress authorizes an appropriation of money for stated purposes, the actual appropriation of that money follows as a matter of routine. From a discussion that took place on the floor of the House of Representatives when H.R. 5146 was given final consideration, however, some doubt is created as to whether the sum authorized will be immediately appropriated so that the project can be speedily carried to conclusion.

The interest of the medical profession in this project is reflected in the several resolutions that have been adopted by the House of Delegates covering a period of some ten years. In 1931 it was brought to the attention of the House of Delegates that plans were then underway to remove the Surgeon General's Library to a site near the Walter Reed Hospital and a resolution was adopted, appealing to the proper officers of the government to locate the proposed new building somewhere in the vicinity of the Library of Congress "where it will be easy of access to the medical profession in Washington, and enable physicians from other parts of the country to reach it within a few minutes after their arrival at the Union Station in Washington." In 1932, however, the then Surgeon General of the Army addressed the House of Delegates, deploring the action taken the preceding year with respect to the new location for the building for the library. He called attention to the fact that the library was an essential part of the medical education system of the Army and urged the House to reconsider its previous action because in his opinion the library should be located near the Army Medical Center on the Walter Reed Reservation. After the appeal by the Surgeon General of the Army, a resolution was introduced in the House, and adopted, rescinding the action taken in 1931.

Again, in 1933, a resolution was adopted, calling attention to the fact that there was then pending before Congress a bill contemplating an appropriation of 3,300,000,000 to erect public buildings and to complete other necessary construction and petitioning that the sum of $2,000,000 be set aside for the purpose of constructing the Army Medical Library and Museum building. In 1934, another resolution was adopted, again calling attention to the necessity for the construction of an adequate, fireproof building for the Army Medical Library and Museum. Reference in this resolution was made to the fact that the secretary of the interior, who was also the administrator of public works, had notified the secretary of war on February 14, 1934, that the present building housing the Army Medical Library and Museum interfered with the plans then in progress for the beautification of the City of Washington and that the building should be removed. The House of Delegates again requested that a sum be made available to construct the new building.

In 1938, it will be recalled, the Congress did authorize $3,750,000 for the new building and the House of Delegates, when it met that year in

San Francisco, adopted a resolution petitioning Congress to make available as soon as practicable funds for the construction of the building. In 1939, the House of Delegates again adopted a resolution petitioning the Congress to provide the necessary funds for the building. In other ways and at other times the interest of the medical profession in the construction of a new building in which to house the Army Medical Library has found expression. The subject has been cause for comment in the reports of the board of trustees, reflecting the activities of the Bureau of Legal Medicine and Legislation, and in numerous editorials that have appeared in *The Journal*. That interest will continue until the plans for the new building ripen into actuality.

While in 1932, the then Surgeon General of the Army felt that the location of the new building in the vicinity of the Congressional Library was inadvisable, it is understood that the present plans to acquire a site east of the Folger Library and the annex to the Library of Congress, the site having been selected by the National Capital Park and Planning Commission, meet with the approval of the Surgeon General of the Army and, of course, such plans are in accord with the initial expression of view by the House of Delegates in 1931.

Study of Eye Injuries

Ninety-eight per cent of the eye injuries which occur in American industries at a rate of 1,000 a day and represent an annual loss of $200,000,000 are wholly unnecessary, according to a study sponsored by the National Society for the Prevention of Blindness and just issued by the Columbia University Press.

"At the end of an eight-hour working day, today and every other work day, a thousand men and women in American factories, mills, mines, utilities, and other places of work will have suffered eye injuries," the study, prepared by the late Louis Resnick, staff member of the society for twenty years, says.

Mr. Resnick's report, which was completed just three days before his death in March, 1941, is based upon two decades of personal observation in workshops throughout the country. It contains a complete summary of eye hazards existing in American industry today. A pioneer in the field of industrial safety, Mr. Resnick was the first editor of the *National Safety News* and at the time of his death was industrial relations director of the National Society for the Prevention of Blindness.

"Conservation of the vision of American workmen is as vital to national defense as is the building of armament and the training of men to use defense equipment," Lewis H. Carris, director emeritus of the society, points out in a preface to the study. "This volume not only lays bare the eye hazards present in industries and occupations of all sorts, but also reports on the measures that may be taken to eliminate these hazards and to guard workers against those which cannot be eliminated. It is the hope of the sponsors of this volume that it will serve not only as a handbook for safety engineers, safety inspectors, and all others engaged in accident prevention generally and sight conservation in particular, but also as a textbook for engineering schools, vocational training authorities, and all others engaged in preparing youth for work in industry."

Outside West Virginia

Dr. George Lyon, attending pediatrician at St. Mary's and Memorial Hospitals, Huntington, was one of the roundtable speakers at the annual session of the American Academy of Pediatrics at Boston on October 8, 1941. The roundtable was on chemotherapy, presided over by Dr. John A. Toomey of Cleveland. The other participants were Dr. Maxwell Finland and Dr. Conrad Wesselhoeft of Harvard and Dr. Harrison F. Flippin of the University of Pennsylvania.

Dr. J. J. Brandabur, Huntington, will preside as chairman of the Section on Railway Surgery at the Southern Medical Association meeting in St. Louis on November 11. His chairman's address will be "Practical Aspects of a Physical Examination Program."

Dr. C. J. Reynolds, Bluefield, and Dr. W. C. D. McCuskey, Wheeling, are scheduled to appear on the program of the Section on Urology of the Southern Medical Association meeting in St. Louis on November 13. Dr. Reynolds will give a paper on "Diagnosis and Treatment of Traumatic Rupture of the Posterior Urethra." Dr. McCuskey's paper will be "A Résumé of the End Results of One Thousand Consecutive Cases Following Surgery for the Relief of Bladder Neck Obstruction."

Dr. Lyon is also on the southern medical program for a discussion of "Chemotherapy of Acute Bacillary Dysentery" before the Section on Medicine on the morning of November 12.

Dr. B. I. Golden, medical superintendent of the Davis Memorial Hospital at Elkins, was elected treasurer of the International College of Surgeons at its recent meeting in Mexico City.

Warrants for the Brinkleys

Under the heading, "Alas, Poor Yorrick! I Knew Him, Horatio," *The Journal of the American Medical Association* for October 11 says:

"On September 22 Mrs. John R. Brinkley was arrested in Kansas City on a fugitive warrant based on a Little Rock, Ark., charge of using the mails to defraud. A similar warrant for 'Dr.' John R. Brinkley was also carried by the deputy United States marshal, but the physician in attendance on 'Dr.' Brinkley said that his condition would not permit the warrant to be served. A telegram had been received from the district attorney at Little Rock, Ark., requesting the arrest of the Brinkleys on charges of sending fraudulent promotional materials through the mails. The physician of 'Dr.' Brinkley requested a delay because the leg of 'Dr.' Brinkley had been amputated in the Research Hospital in Kansas City on August 23 and it was reported that he 'suffered a severe heart attack September 2.' It is reported that Mrs. Brinkley stated the bond would be made returnable in Little Rock., where an answer would be made to the fraud charges. Incidentally, it was stated in the complaint that 'Dr. Brinkley had treated some 16,000 persons at a fee of $750 each or a total of $12,000,000' and that the Brinkleys had represented 'to certain persons and to others generally' that 'Dr.' Brinkley 'had found a substance which would restore to normal sex vigor weak men and women' and that this and other claims alleged to have been made for the treatment 'were false and fraudulent and the United States mails were used to promote this fraud.' Another principal charge in the indictment was that the defendants 'did falsely pretend that John R. Brinkley was a great surgeon, scientist, and physician, that he, while visiting medical centers in Europe, had found a real substance which when properly administered would restore to normal sexual vigor sexually weak men and women.' The Brinkley hospitals at Little Rock have been closed, and several months ago 'Dr.' Brinkley filed a voluntary petition in bankruptcy in San Antonio, Texas."

County Society News

Cabell County

The regular meeting of the Cabell County Medical Society was held at the Hotel Prichard, Thursday, October 9 at 8:30 p. m., at which time the annual election of officers took place.

The scientific program consisted of an address by Alfred R. Shands, Jr., M. D., medical director, deNemours Foundation, Wilmington, Delaware, former professor of orthopedic surgery at Duke University Medical School, and author of a well known text on this subject. The subject was "Surgery of the Lower Extremities in Infantile Paralysis."

The president of the society appointed E. N. Carter, M. D., as a member of the National Defense Committee. He also appointed a special committee on Civilian Defense. The members of this committee are: Drs. G. M. Lyon, chairman; C. B. Wright, vice chairman; W. F. Beckner, O. B. Biern, and R. M. Bobbitt.

COLE D. GENGE, *Secretary*.

Fayette County

The Fayette County Medical Society held its first fall meeting at the Woman's Club House, Montgomery, on September 23, at 8:00 p. m.

Dr. M. L. Bonar of Charleston addressed the society on "Some Common Skin Diseases", with special emphasis upon skin lesions of neurological origin.

Coffee and sandwiches were served by members of the Woman's Club.

On October 14, the Fayette society held their regular meeting at Conley Hall, Montgomery, at 8:00 p. m. The program consisted of the showing of color films of "Vitamin B Complex" and sound films of venereal diseases and their control, in connection with national defense.

Dr. L. A. Moser of Minden was admitted to membership in the society.

G. A. DANIEL, *Secretary*.

Kanawha County

The regular meeting of the Kanawha Medical Society was held in the ballroom of the Daniel Boone Hotel, Charleston, on Tuesday, October 14, at 8:30 p. m.

Dr. Charles Reid Edwards of Baltimore, clinical professor of surgery at the University of Maryland was the guest speaker and his subject was "Combined Abdominal and Thoracic Infections."

The usual dinner was held at 6:30, preceding the meeting and a good number of members were present.

GEORGE P. HEFFNER, *Secretary.*

Logan County

The Logan County Medical Society held its regular meeting Wednesday evening, October 8, at eight o'clock at the Aracoma Hotel.

Dr. W. L. Cooke of Charleston was the guest speaker. Dr. Cooke read an excellent paper entitled "The Rôle of the Home Physician in the Control and Treatment of Tuberculosis." He especially emphasized that it was the duty of the physician to closely examine the contacts of the active cases of tuberculosis.

Drs. Earl M. Peck, Logan; Leon Nathanson, Earling; Reuben Rubisoff, Logan, and Robert R. Bonar, Holden, were elected to membership in the society. Fourteen members and five guests were present at the meeting.

W. P. HAMILTON, *Secretary.*

Mercer County

The Mercer County Medical Society met September 25, at the Municipal Building in Bluefield.

Dr. Harry Steele was elected chairman of the Medical Defense Committee.

Dr. Arthur Gersabeck of McComas, Dr. Robert C. Fugate of Bluefield and Dr. Frank M. Huff of Bluefield were admitted to membership.

Dr. Hampton St. Clair read a paper entitled "The Surgical Treatment of Ruptured Appendix." This paper was based on a survey of the treatment of ruptured appendices at the Bluefield Sanitarium over a ten year period. He advocates immediate operation except where a definite abscess is palpated; McBurney incision; closure of the peritoneum except in cases of abscess, where the appendix cannot be removed or where necrotic tissue is left in the abdomen. They use sulfanilamide on the cecum and in the wound and sulfathiazole by mouth. Their mortality over the ten year period was 6.4 per cent in non-drainage cases and 16 per cent in cases with drainage. This paper was discussed by Dr. Wade St. Clair, Dr. Harry Steele, Dr. J. I. Markell, and Dr. Frank Huff.

Dr. R. O. Rogers read a paper on "Infectious Mononucleosis" with a report of two cases. He stressed the high immature lymphocyte count and low granulocyte count as the diagnostic points. The diagnosis is confirmed by agglutination of sheep cells by the patient's blood due to the presence of heterophyl antibodies. In one case, the abdominal pain was due to mesenteric adenopathy simulating acute appendicitis. The sulfonamides had no effect upon the disease.

The Mercer County Medical Society held their October meeting at the Memorial Building in Princeton, October 9.

The principal speaker was Dr. James E. Wood, professor of medicine at the University of Virginia. He discussed "The Effects of Anesthesia on the Heart and Peripheral Circulation."

Dr. Wood's studies showed that the harmful effects of most anesthesia were due to an anoxemia and especially its effect on the ganglion of the brain, which may cause permanent disability. He pointed out that from a mortality standpoint, nitrous oxide might be all right, but that from a morbidity standpoint, it was a dangerous anesthesia due to paralysis following it. He said that cyclopropane was a dangerous anesthesic because of sudden death due to heart block.

He stated that at the University of Virginia, they used spinal anesthesia with pontocaine almost as a routine, but that throughout the country ether was again becoming the anesthesia of choice. He is opposed to all intravenous anesthesia. He likes avertin anesthesia all right as a basal anesthesia but not as a deep anesthesia.

After the meeting, a buffet supper was served to the society by Dr. Jim Vermillion at his home.

FRANK HOLROYD, *Secretary.*

Ohio County

The Ohio County Medical Society held their regular monthly meeting on September 26 at the solarium of the Ohio Valley General Hospital, at 8:30 p. m. Dr. Richard B. Cattell, Lahey Clinic, Boston, spoke on "The Diagnosis and Management of Biliary Tract Disease."

Dr. Cattell's paper was discussed by Drs. J. R. Caldwell and J. O. Rankin.

On Friday, October 10, the Ohio County Society met at the same time and place for their regular meeting. Dr. Joseph H. Barach, medical director of Falk Clinic, University of Pittsburgh, Pittsburgh, Pa., was the main speaker. His subject

was "The Present Day Treatment of Diabetes and Complications."

Dr. R. J. Snider and Dr. D. A. MacGregor led the discussion of Dr. Barach's presentation.

RICHARD D. GILL, *Secretary*.

Potomac Valley

The Potomac Valley Medical Society met on September 24 at the Hermitage Hotel, Petersburg, W. Va. A turkey dinner was served to all those present, preceding the meeting. In the unavoidable absence of the guest speaker for the evening, a roundtable discussion on obstetrics was held.

Dr. J. A. Newcome presided at the meeting.

E. A. COURRIER, *Secretary*.

Central West Virginia

The Central West Virginia Medical Society will meet at Buckhannon, October 30 at the Baptist church at 6:00 p. m. The speaker of the evening will be Dr. B. S. Brake of Clarksburg, on the subject "Drainage." Dr. J. C. Kerr, also of Clarksburg, will present dermatologic slides.

This is also a meeting for the election of officers.

A. B. BOWYER, *Secretary*.

STATE NEWS ITEMS

Dr. Fred R. Whittlesey, who left West Virginia about one year ago to join the faculty of the medical school of the University of Nebraska at Omaha, has returned and is again located at Morgantown. Dr. Whittlesey was a member of the Publication Committee of the WEST VIRGINIA MEDICAL JOURNAL at the time he left the state. In commenting on his return, Dr. Whittlesey pointed out that he was born in China, that he had lived longer in West Virginia than in any other state, that he considered this his home, and he just could not stay away. He is doing private practice in Morgantown and is again affiliated with the teaching staff of the school of medicine.

* * * *

Dr. R. H. Jones of Montgomery has gone to Fairmont, W. Va. His address is 732 Benoni Ave.

* * * *

Dr. R. S. Widmeyer of Parkersburg has moved to Riverdale Gardens, 4743 Pinewood Road, Jacksonville, Florida.

* * * *

In Logan county, Dr. G. D. Vaughan of Holden has left the state. Dr. Louis Kroger is serving in the Naval Medical Corps.

Dr. J. B. Thompson, formerly of Scarbro, is located at Oak Hill Hospital, Oak Hill.

* * * *

Mercer County Medical Society has two new members: Dr. Arthur Gersabeck of McComas and Dr. R. C. Fugate of Bluefield.

* * * *

Dr. Guy Hinsdale of White Sulphur Springs is the American representative of the International Society of Medical Hydrology and Fellow of the Royal Society of Medicine, London.

* * * *

Dr. Joseph L. Greene, formerly of Logan, is located at 2518 Tunlaw Road, N. W., Washington, D. C.

* * * *

The following new members were recently taken into the Kanawha Medical Society: Dr. Ralph J. Jones, Dr. Edwin M. Shepherd, Dr. John W. Hash, and Dr. Lloyd Edgar Cox, all located in Charleston.

* * * *

Dr. K. E. Gerchow, formerly of Beckley, has moved to Morgantown and his membership has been transferred to the Monongalia society.

The following Raleigh county doctors are in military service: Drs. L. R. Ayers, G. R. Cunningham, W. W. Davis, L. R. Dudney, K. M. McPherson, P. D. Nutter, C. A. Smith, J. H. Woolwine, Jr.

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In Harrison County Medical Society, the following committee has been appointed for medical defense: Chairman, Dr. George F. Evans; Dr. S. S. Hall, Dr. C. O. Post, Dr. B. S. Brake.

* * * *

Dr. E. K. Munn of Watson, has gone to Jenkins, Kentucky.

* * * *

Dr. Harry M. Campbell of Parkersburg and Dr. D. P. Kessler of Weston have been made honorary life members of the Association.

* * * *

Dr. R. J. Condry of Elkins is in active service now. His address is: Lt. Comdr. R. J. Condry, M. D., U. S. Naval Hospital, Brooklyn, N. Y. He will have to be replaced as a member of the Committee on Scientific Works for the 1942 annual meeting.

* * * *

Dr. Wm. A. Wallace of Martinsburg is taking postgraduate work at Harvard.

Medical Preparedness

Treamine of Gas Gangrene

By means of a dye with a special affinity for the cells of the blood which help combat disease, Benjamin Kropp, Ph.D., and Dorothy G. Smith, M.A., Kingston, Ontario, Canada, have been able to shed some light on the question of how sulfanilamide and its derivatives produce beneficial effects in their use for treating gas gangrene. The two investigators report their findings in the September-October issue of *War Medicine*, published by the American Medical Association, Chicago, in cooperation with the Division of Medical Sciences of the National Research Council, Washington, D. C.

"A condition observed and commented on by almost all investigators of the microscopic picture of gas gangrene infection," the two authors say, "is the notable absence of a typical inflammatory reaction (indicative of the accumulation of large amounts of blood necessary to combat the invading organism) at or near the site of the lesion. While the conditions described vary apparently with the duration of the infection, the species of (germ) responsible, the virulence of the species, the nature of the tissues affected, the host animal, etc., there seems to be almost general agreement that the mobilization of (blood cells) which have phagocytic (to engulf the invading germs) properties is delayed or inhibited in the presence of the toxin of the gas gangrene organism. Whether the action of the toxin on these cells is confined to antimigrational effects or affects also in some direct way their longevity, their genesis, or their ability to encompass foreign particulate matter is not certain."

The investigations by the two authors consisted of administering an anesthetic to 14 guinea pigs and then introducing into a wound on the thigh the germ most commonly found in gas gangrene. Into the wound in eight of the animals sulfanilamide also was introduced at the time of infection.

Animals of both the control and the experimental series were given sterile doses of the dye, trypan blue, under the skin. The amount given was just sufficient to turn the skin pale blue. Particles of the injected dye were taken up or absorbed by the cells the investigators were seeking to study and thus were stained so they could be observed in contrast to other cells.

From their investigations the authors conclude that "the toxin of (the gas gangrene germ) rapidly attacks and destroys subcutaneous connective tissue and phagocytic cells present in the connective tissue, and the organisms and toxin spread chiefly along connective tissue planes.

"The accumulation and phagocytic activity of (blood cells) and other phagocytic cells at the wound site are inhibited by the toxin of (the germ of gas gangrene)."

Sulfanilamide, they say, introduced into the wound in the presence of experimental gas gangrene in the guinea pig partially overcomes the inhibitory action of the infection on the migration of the various cells of the connective tissue as well as the ability of certain cells to ingest or engulf the germ of the infection.

Traveling Induction Boards

It has been learned from authoritative sources that the method of examining West Virginia draftees will be changed on November 1, with the abandonment of the two induction boards in Huntington and Clarksburg. Traveling examining boards will be substituted for the present centers. It is understood that there will be one traveling examining board for northern West Virginia and one for the southern part of the state.

The plan as outlined calls for the setting up of induction centers in Huntington, Charleston, Beckley, Parkersburg, and Hazard, Kentucky, for the southern examining board; and Wheeling, Clarksburg, Martinsburg and Canton, Ohio, for the northern board. The traveling boards will meet once each month in each of the above named induction centers.

The traveling examining boards will consist of from eight to ten Army medical officers, bolstered with six to eight civilian physicians who will be asked to come in and assist. The civilian doctors will receive $15 per day for services, it is said.

Symptoms of Spinal Abscess

A sequence of symptoms and signs important in arriving at the early diagnosis of acute spinal epidural abscess which is necessary if the patient is to receive the prompt treatment required to prevent lifelong disability or death, are outlined by Saul Boharas, M.D., and Y. D. Koskoff, M.D., Pittsburgh, in the *A.M.A. Journal* for September 27.

The men say the condition is a disease which is rarely diagnosed before onset of irreparable damage to the spinal cord.

TWENTY-FIVE YEARS AGO

From the November, 1916 Journal

Original articles in the WEST VIRGINIA MEDICAL JOURNAL, November, 1916, were by Dr. Lewellyn F. Barker, Baltimore, Md.; Dr. C. O. Henry, Fairmont; Dr. Harold B. Wood, Charleston; Dr. Charles M. Scott, Bluefield, and Dr. T. E. Vass, Bluefield.

* * * *

The Barbour-Randolph-Tucker County Medical Society met in the Y. M. C. A., Elkins, on October 5, at 1:30 p. m. The following members were present: Drs. Daniels, Powell, Hamilton, Butt, Miller, Perry, Hoff, Rodgers, Golden, S. G. Moore, Wilson, Irons, Talbott, Gruber and A. S. Bosworth.

Since there has been great trouble and annoyance in getting sick and injured patients conveyed on the Western Maryland Railroad owing to the refusal to carry patients unless on a special baggage car, which is often beyond the means of the patients, on motion a committee of three was appointed by the president to take the matter up with Dr. Dunott, chief surgeon of the railroad, and see if some more satisfactory solution could not be made. * * *

The following officers were elected for 1917: President, Dr. E. M. Hamilton; vice presidents, Drs. S. G. Moore and A. P. Butt; secretary-treasurer, J. C. Irons; censor for Tucker county, Dr. J. L. Miller. * * *

Dr. Golden then took up the dread disease, poliomyelitis. Instead of giving a prepared paper, he gave the compilation of health boards, the result of long and painstaking investigation, showing the prevalence of the disease, its indefinite origin and mode of communication, and the plans used to prevent its spread, etc. The most striking conclusion is that "not more than five per cent of the cases are the result of contact."

* * * *

The Grant-Hampshire, Hardy-Mineral Medical Society held its regular meeting at Moorefield on August 3. Dr. Weirich of the State Department of Health, delivered a very interesting and entertaining address in the course of which he dealt with matters of vital concern to the public and to the profession. * * *

Dr. C. S. Hoffman read a paper entitled, "Obstetric Aphorisms."

Visitors present were: Drs. Hawkins, Gracie, Fochman and Kein of Cumberland, and Charles Gilkerson and Dr. R. E. L. Hackney of Moorefield.

Members present were: Drs. Wright, Love, Gochenour, Thomas, Babb, Martin, Hoffman, Percival Lantz, Oliver Lantz, Brook, Young and Walcott.

* * * *

The Logan Medical Society held its first regular meeting since May on September 21, 1916. The entire time was devoted to the discussion of proper ethics with "list" patients in contract work in mine practice.

Dr. Lawson contended the private practice doctor was doing much to keep the profession aggravated and as a whole it was degrading the whole bunch and causing much disrespect to the profession at large. * * *

Dr. McDonald thought that ethics could not be made to apply to cases that had a physician in attendance whose services was arbitrary and not a matter of choice of the patient, and certainly not to those who called the outside physician first. He also said that a physician who contracted work and farmed it out to some hireling for purely commercial gains, had no business in a medical society and certainly had no ethics * * * and should be treated in a negligible way so long as such work continued.

* * * *

The Mercer County Medical Society held a surgical and medical clinic on September 27 at the Princeton General Hospital, beginning at 12:30 p. m. and lasting throughout the afternoon. * * *

At eight o'clock a dinner was held in the dining room at the Virginia Hotel, with Dr. S. R. Holroyd as toastmaster. * * *

Dr. F. T. Ridley of Bluefield was the first speaker. He was chief of the medical staff at the mobilization camp at Kanawha City and he gave us a very interesting talk on sanitation. One of the most important duties of the medical staff was to properly take care of the refuse matter, and the greatest enemy was the fly. The water supply came from the Charleston Water Company. Ice was delivered once a day. * * * The diseases in camp were very few and most of them were due to overeating the first few weeks. They had a few cases of measles, trachoma, and appendicitis. Crude oil and straw were used to burn the refuse matter. Very little lime is used about the camp.

In response to an appeal from the American Red Cross Society, the Cabell County Medical Society at Huntington has designated five physicians who in case of a great national emergency or calamity would volunteer their services under the Red Cross. The physicians appointed are, Drs. Harry W. Keatley, James R. Bloss, F. A. Fitch, Karl C. Prichard and W. E. Neal.

* * * *

The following table shows the number of applicants for medical licensure by examination in this state during the five years ending December, 1915, and the number of failures. That there are now fewer failures is due to the elimination of the poorer colleges, the exclusion from examination by the State Board of Colleges, and the requirements of a higher preliminary education, graduation from a four year high school or its proven equivalent:

Year	*Applicants*	*Rejections*
1911	124	25
1912	93	26
1913	85	26
1914	64	6
1915	77	5

Progress in Preventing Influenza A

Recent investigations which revealed vaccines for influenza A to be effective in reducing the incidence of that type of the disease are hailed in an editorial in *The Journal of the A. M. A.* for October 25 as offering "the most encouraging evidence of practical applicability of influenza vaccination which has so far appeared in the literature."

The Journal points out that F. L. Horsfall, Jr., M. D.; E. H. Lennette, M. D.; E. R. Rickard, M. D., and G. K. Hirst, M. D., have just reported their findings from a large scale use of a vaccine composed of the virus of influenza A and the virus of canine distemper, treated with formaldehyde to kill the viruses. More than a year ago it was found, quite by accident, by Horsfall and Lennette that the combining of the canine distemper virus with that of influenza A made a more effective vaccine. In a recent investigation Horsfall and his colleagues gave single injections of this vaccine beneath the skin to 7,907 volunteers in fifteen institutions in Florida and Alabama. The number not vaccinated in the same institutions was 9,688. About four months after the vaccinations, epidemics of influenza occurred in ten of these institutions with influenza cases totaling 1,450.

Obituaries

Doctor George Fordham

Dr. George Fordman, 63 years of age, medical supervisor of the Powellton division of the Koppers Coal Company, died unexpectedly at his residence at Powellton on the morning of October 4, 1941. Dr. Fordham was widely known throughout the state for his keen interest in the problems of organized medicine. He was a past president of the Fayette County Medical Society and was active in the work of the State Association.

Dr. Fordham was born in New York City in 1878. He served as a private in the hospital corps during the Spanish-American War. Following this he graduated in pharmacy from the New York College of Pharmacy and later received his medical degree from the University of Virginia in 1907. This was followed by postgraduate work at Harvard, after which he came to West Virginia in 1909 and began practice at Affinity on Winding Gulf.

The deceased was a colonel in the United States Army Medical Corps during the World War. He was in charge of evacuation of the sick and wounded at Brest, France. After the armistice, he was medical officer in charge of the Vilna Typhus Hospital at Vilna, Poland, in 1920. Here he married an American Red Cross nurse, Miss Mary Francis Yodzis, who survives.

In addition to his widow, Dr. Fordham is survived by one son, George Fordham, Jr., who entered the medical school at Duke University this year. Dr. Fordham was buried with full military honors in Arlington National Cemetery.

Doctor Moritz F. Petersen

Dr. Moritz F. Petersen, well known Charleston pediatrician, died at Rockford, Illinois, on October 2, 1941. He was born at Dundee, Ilinois, in 1893 and graduated in medicine from Northwestern University in 1920. After three years at the Cincinnati General Hospital, he located in Charleston and practiced there until the past summer, when he took postgraduate work at Northwestern and located at Rockford near his former home.

Dr. Petersen became a member of the Association in 1924 and in 1932-1933 served two terms as secretary of the Kanawha Medical Society. He also served one year as West Virginia chairman of the White House Conference on Child Welfare.

He is survived by his widow, Kathryn Batey Petersen, who is a past president of the State Woman's Auxiliary, and by three sons.

Doctor Elbert S. Dupuy

Dr. Elbert Stevenson Dupuy, prominent Raleigh county physician, died suddenly at his home in Beckley on October 16, 1941, of a heart attack. He was 65 years of age and had practiced in Raleigh and Fayette counties for 40 years. He was previously located at Summerlee and Stuart, serving as mayor of Stuart for seven years.

Dr. Dupuy was born at Garrison, Kentucky, on March 20, 1876. After his academic education, he entered Miami Medical College at Cincinnati and grdauated there in 1901. He was licensed in West Virginia the same year, and followed this with postgraduate work at the New York Postgraduate Medical School.

Dr. Dupuy was a past secretary and past president of the Raleigh County Medical Society. He was elected to honorary membership in the Association last spring. Surviving are his widow and two physician sons, Dr. E. Newton Dupuy and Dr. Samuel S. Dupuy, both of Raleigh county.

Menace of Rheumatic Fever

The greatest danger from rheumatic fever seems to exist in regions where, and at times when, cold is coupled with dampness, Arturo Castiglioni, M.D., New Haven, Conn., declares in *Hygeia, The Health Magazine* for November. "The largest number of acute attacks of rheumatic fever occur in the coldest and wettest months of the year," he says, "and in some regions of the United States a great frequency is found in the late winter and the early spring months. Rheumatic fever is more prevalent in industrial and urban populations than in rural ones; poverty and its consequences seem to furnish a favorable soil for its development."

The most harmful result of rheumatic fever is its effect on the heart, the physician points out, explaining that "The greatest number of cases of heart disease are found among rheumatics. Sometimes it is a defective heart which reveals the story of an old and forgotten rheumatism."

The disease is less frequent and less severe in the tropics than in the temperate climates. Hospital statistics in North America record a greater frequency in Northern and Middle Atlantic states than in the Southern and Middle Western states.

Woman's Auxiliary

McDowell County

The Woman's Auxiliary to the McDowell County Medical Society met on Friday, October 17 at the Appalachian Building, Welch. Mrs. H. P. Evans, president, called the meeting to order. There were sixteen members and eight visitors present, and Mrs. Welch England, state president, spoke on "Nutrition and a World Crisis."

Dr. J. Howard Anderson, member of the Auxiliary Advisory Committee, spoke briefly and praised the efforts of the Auxiliary as an aid to organized medicine.

A motion was carried to donate $10.00 to the Crippled Children's Society. The *Hygeia* Committee reported 25 subscriptions for the schools. In answer to Mrs. England's plea for medical and surgical supplies for war relief, a resolution was offered that the medical society be asked to donate any possible materials, and that the public be asked for donations.

The next meeting will be held at the Appalachian Building on Wednesday, November 12.

RINDA G. FOWLKES, *Secretary*.

Parkersburg

The Woman's Auxiliary to the Academy of Medicine of Parkersburg opened their fall program at a joint meeting with the State Auxiliary's Executive Board. The meeting was held at the Chancellor Hotel, Parkersburg, October 8. An attractive luncehon was served to forty-seven guests and members. The hostesses for the afternoon were Mrs. B. O. Robinson, Mrs. R. H. Wharton, Mrs. Athey Lutz, and Mrs. A. C. Woofter.

Mrs. Woofter, the local president, opened the meeting with a cordial welcome to the guests, and then introduced Mrs. Welch England, state president, who expressed the appreciation of the state group for the hospitality of the Parkersburg Auxiliary.

Mrs. V. E. Holcombe, national auxiliary past president, introduced Mrs. R. E. Mosiman of Seattle, Washington, national president of the Auxiliary, and guest speaker for the afternoon session. Her subject was "Our Problems in Health Defense in Connection with Our National Defense Program."

The next meeting will be held November 12, 1941.

MRS. CHARLES L. GOODHAND, *Secretary*.

Raleigh County

The Woman's Auxiliary to the Raleigh County Medical Society met on September 17, at 6:30 p. m. at the Black Knight Country Club, Beckley. Mrs. E. Newton DuPuy, president, presided. There were thirty-three members and guests present.

Miss Mary Virginia Gill, executive secretary of the Raleigh County Tuberculosis Association spoke on the tuberculosis program in Raleigh county. Dinner was served during the evening and five tables of bridge were formed after dinner.

The October meeting was to be held at the Beckley Hotel, Beckley.

MRS. HAZEL L. SHAFFER, *Secretary*.

Use of Bromo-Seltzer

The case of a business man who suffered a progressive mental deterioration, which was present for eleven to fifteen years and culminated in a state of complete mental confusion, amnesia, disorientation and hallucinosis resulting from continuous self medication with large quantities of bromo-seltzer, is reported in *The Journal of the A. M. A.* for October 11 by Paul C. Bucy, M.D.; Thomas A. Weaver, M.D., and Edward H. Camp, M.D., Chicago. Discontinuance of the drug resulted in distinct improvement.

The authors point out that "numerous reports have called attention to the fact that severe psychosis, with mental deterioration, loss of memory, delirium and hallucinosis, is not uncommon as a result of intoxication with bromides. * * *"

The three Chicago physicians say that the wife of their patient stated "that she first became aware that he was taking bromo-seltzer on the day of their marriage in 1900. He had suffered from headaches of a migrainous character which occurred approximately once a month during most of his adult life, and he sought relief from these by an occasional dose of this proprietary preparation. In 1924, at the time of severe business reverses, he began taking bromo-seltzer daily. * * *"

His condition finally became so grave that hospitalization became necessary. About a month after admission to the hospital he had sufficiently improved so that he was discharged. However, there remained some memory defect.

BOOK REVIEWS

Electrocardiography in Practice

ELECTROCARDIOGRAPHY IN PRACTICE by Ashton Graybiel, M. D. and Paul D. White, M. D. First Edition. Cloth. Price, $6.00. Pages 319. Philadelphia, Pa., W. B. Saunders Co.

This work will fill the long felt want for a work on electrocardiography which has as its background extensive clinical experience by men who are not only representative of scientific medicine, but clinicians of outstanding ability. To the general practitioner it has its appeal in simplicity and clarity. The cardiologist finds in this publication the exposition of normal variations in the electrocardiogram. The student of diseases of the heart has at his command an authentic and easily used book of reference. Perhaps the most outstanding feature of "Electrocardiography in Practice" is the fact that a section is devoted to "test" electrocardiograms for interpretation.

—A. SPATES BRADY, JR., M. D.

Nursing in West Virginia

HISTORY OF NURSING IN WEST VIRGINIA, 87 pp., 50 cents; West Virginia State Nurses' Association, 47 Capital City Building, Charleston, West Virginia.

"A History of Nursing in West Virginia" is just what the name implies. This interesting little book, which traces the history of this profession from 1906 to date, was the outgrowth of material collected by the late Mary E. Reid, R. N.

In 1939, after the death of Miss Reid, the West Virginia State Nurses' Association requested Mrs. Margaret J. Steele of Charleston, one of the three nurses who organized the Association, to act as chairman of the committee to revise and publish the history. On account of the voluminous amount of material collected, much condensation was necessary.

The book is divided, generally, into three parts. The first, a historical sketch of the formation and growth of the State Association; second, a résumé of the annual meetings; third, a history of public nursing in West Virginia. Much other pertinent information is contained in "A History of Nursing in West Virginia."

Perhaps the most interesting information is that which discusses the development of the profession of nursing from its pioneer stage to date. It brings more closely the handicaps which existed in the early days of nursing and points the way to future accomplishments.

Neighbor Journals

Milestone for A. M. A.

In the interest of spreading knowledge among *Journal* readers of that which makes the American Medical Association "tick," we submit the appended observations by an Ohio delegate as they appeared in the July issue of the *Bulletin of The Mahoning County Medical Society*:

At the sound of his gavel, Dr. H. H. Shoulders, speaker, on Friday afternoon, June 5, closed the 1941 session of the House of Delegates of the A. M. A. With it, quite incidentally, ended the service as a delegate of the writer hereof.

A review of the past three sessions of the House compels the conclusion that no profession has more reason to be proud of its chosen representatives than we, the rank and file, of American medicine. The carefulness with which all problems are considered, the fairness and consideration accorded to every member, the efficiency of those who toil through the mass of work to be done, the statesman-like grasp of questions profoundly important to us and to our country—these things merit our unstinted applause.

The A. M. A. is a vast machine. It has many parts. Such a huge organization is awesome to the novice. But when set out so that one can see its varying functions so closely coordinated, it becomes simple, direct, and honest. Realizing, of course, that all things human lack perfection, one fails to find a single basic fault. One must accord to our national body the highest admiration. To him who views a large piece of machinery, this little lever, that tiny spring, another idling bit of a piston, often seems superfluous—might just as well take the thing off. But take it away and this snaps, that jams, that little oiler does not work and—bingo! The whole mighty business is "shot"—and great damage results. That's the A. M. A.

But this huge structure did not spring full-grown out of the forehead of Jupiter. It came about through the planning of men of brains and patience. To these men, we of the rank and file—the "little shots"—owe more than we can ever repay.—*Pennsylvania Medical Journal.*

The Psychology of Quislingism

Most of us have been surprised by the influence that Hitler has exerted not only over his own people but over individuals in countries not his own—those who have been willing to collaborate with the Nazis even at the expense of their compatriots. The outstanding, and to ordinary eyes despicable, Quisling phenomenon is open to a variety of explanations—"Every man has his price," and "Nothing succeeds like success." There is, too, the stuff of which revolutionaries are sometimes made, such as spite, injured pride, bitter feelings of inferiority, and sensations of frustration and impotence in the face of the prevailing order. No doubt many of Hitler's converts are psychopaths like Hitler himself, but without the energy which makes him look like a genius. They are, in fact, in Henderson's terminology, "aggressive" but not "creative" psychopaths.

Although these explanations are satisfactory up to a point, the suspicion that they do not explain everything is shown in the frequent references to the so-called hypnotic powers of Hitler, not only over his own people but over his political visitors. It is recorded of Napoleon that he had a similar effect in engendering fanatical and childlike self-abnegation in some people. Tolstoy, with the intuitive veracity of the first class novelist, records in *War and Peace* how an elderly warrior, his face flushed and his eyes gleaming, led his troop through a river, drowning 40 of them in the process, for no better reason than that Napoleon was looking on. "Quos Deus vult perdere, prius dementat." There is no sense in such a performance; it is rather a kind of masochism. Those who to this day collect relics of Napoleon, and in a sense worship his memory, are examples in vitro of the same kind of abasement. Devotion of such sort deserves examination for its unconscious roots.

Dr. Ernest Jones, in a recent analysis of the psychology of Quislingism, has described the various attitudes of those who approved of Naziism—the passive acceptance of the slum-dweller, who thought it a matter of indifference who governed; the denial of Hitler's aggressiveness by the escapist, who asserted there would be no war; the partial admission of Hitler's aggressiveness by the appeaser, who thought it could be bought off; and the man who thought the aggressiveness quite justifiable and even advisable. Jones ascribes all these attitudes in their various degrees up to the fully developed acquiescence and cooperation of the Quisling to the unconscious attitude toward the father. There is fear of him, and of one's own dangerous impulses toward him. The Quisling way is to identify might with right, and to say that because these dangerous

impulses are strong they must also be good. At the same time they are denied within the subject himself and projected on to the father, who thereby becomes good as well as powerful and with whom the potential Quisling identifies himself. The attitude is psychologically homosexual.

However hypothetic these speculations may be, they emphasize what is clearly important—namely, the part played by guilty feelings in inhibiting resistance to Hitler. German propaganda has in this respect taken a leaf out of the book of some religions. It has known too how to play on the existence of a sense of sin in the people of the western civilization —a sense which Freudians believe to be based on the forgotten unconscious conflicts of infancy and childhood.—*British Medical Journal.*

Neglected Symptoms

If asked what is the most commonly neglected symptom of male patients, undoubtedly the answer should be the failure to recognize the significance of a weak urinary stream. Why should a man with fairly good sense, especially concerning plumbing around his house, fail to heed the significance of a symptom so easily recognized, and one which is so likely to be followed by serious consequences? The answer to this question is that he usually attributes it to his age. He thinks, and perhaps naturally, that a weak stream is due to a weak bladder muscle. This view is, of course, incorrect because the reason for the weak stream nearly always is a definite vesical neck obstruction, due either to enlargement of the prostate gland, to a fibrous contraction, to a valve-like formation or to an urethral stricture which hinders the flow of urine.

It is well known that an important part of the kidney function is carried on in a filtration-like manner. We know that a filter will not work well when the tube leading away from it is partly obstructed. Unfortunately, patients with vesical neck obstructions do not at first have pain or other symptoms which would direct attention to the beginning of trouble. Unfortunately, too, urinalysis affords little assistance. By this we mean that the urine may remain negative for a considerable time after the obstruction has become fairly definite with perhaps considerable renal damage and residual urine.

Frequency in voiding is often regarded as due to nervousness, habit formation, unusual intake of fluids, et cetera. And so, for a considerable time, the elderly man is likely to look with complacency upon a symptom which is distinctly significant of trouble ahead.

Formerly when an open cutting operation, which was not without hazards, was the only procedure possible to overcome vesical neck obstruction, it was not important to recognize enlargement of the prostate in its early stages. The advent of transurethral resection now has changed the criteria for seeking relief from obstructive lesions. There is practically nothing which makes a man grow old faster than urinary obstruction. Since, therefore, relief may be obtained, if sought reasonably early, without much danger and with a comparatively short stay in the hospital, there is no valid reason for postponing a transurethral resection until the patient's health is seriously impaired.

When properly done the great majority of vesical neck obstructions may be relieved transurethrally and as permanently as by the more dangerous prostatectomy. A weak urinary stream after a transurethral operation means that the resection was not adequate. This may be shown easily by a cystourethroscopic examination and may be corrected by the proper removal of the remaining obstructing tissue.

We talk much of preventive medicine and its advantages which, of course, is laudable. There are few things, however, done in preventive medicine which could reduce morbidity more than to relieve vesical neck obstructions before serious or irreparable damage has occurred.—*Georgia Medical Journal.*

Our Aging Population

In the early days of this country there was a large proportion of children and young adults, with a correspondingly small proportion of older persons. It will not be long now, trends being what they are, when this state of affairs will be reversed.

Three factors are operating to produce the latter result—declining birth rate, curtailed immigration, and improved mortality in childhood and early adult life.

Dublin foresees some interesting (and disquieting) consequences. While normally conservative and tending to uphold sound political and social institutions, the elderly may be manipulated unscrupulously and demand grants ruinous economically and financially, including the gratification of special medical desires and needs. New types of

hospitals for mental and physical ailments, particularly in southern areas, with a vast army of government-employed physicians, will be some of the effects of medicine.

Small apartments will be the rule. Per capita food consumption will tend to decline—a blow to agriculture. The payment of old age benefits under social security will be alarmingly accelerated.

Future federal budgets will have to take the aging population constantly into account, along with new pensions for war service.

The new pattern of life will call for statesmanship of a high order, if disaster is to be averted and advantage taken of whatever is promising in the new order of things.

But the conclusion can not be escaped that we are imposing upon our children an obligation to care for a huge proportion of old people, along with the debts now being incurred for other reasons.

The race suicide fanatics may yet face a fearful reckoning. Dublin looks for a minimum of about 13 births per thousand of population by 1980. He so reads the "wave of the future."—*Medical Times.*

This Trifle, War

Whatever its drawbacks, total war is not open to the same eugenic objections as the old-fashioned kind. It has been said of wars in the past that they destroy the cream of the young manhood of a generation; and that the best germ-plasm is thus irrevocably lost, to the lasting detriment of the race. To see men in terms of germ-plasm savours, perhaps, of the biologist's fancy that the hen is merely a device for producing more eggs; but the argument is disturbing for all that. To know that this dysgenic effect is reduced, because the risk is more evenly distributed, is a minor consolation of this war. Raymond Pearl, however, held that no war had so far occurred in the nineteenth or twentieth century which had had any measurable genetic effect on the nations involved. This seems incredible until his figures are studied. He pointed out that wars, nowadays, last only a short time in comparison with the span of human life; and more fighters return than are killed. They return in the prime of life, capable even if maimed of founding healthy families; and most of them do. In the last war those killed formed a startingly small fraction of the total population. He estimated that the loss to

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the American race was only 0.055 per cent of the 1910 population, or 0.048 per cent of the 1920 population, and thought it unlikely that any geneticist would regard five one-hundredths of one per cent as a significant loss from the total gene pool of the population. The comparable figure for France was, of course, much higher, lying, he calculated, somewhere between 1.4 and 3.4 per cent of the population; yet even so it could have had no measurable effect on the quality of the French race. These figures are worth remembering at the present time, when pressure of war spoils the sense of proportion. Nor is it merely on genetic grounds that they are cheering; they remind that, at worst, wars are minor interruptions of our evolution and that we have a good chance of growing out of them.—*The Lancet.*

Old Kinks and New Ones

Those who read the proceedings of the House of Delegates of the American Medical Association published in *The Journal of the A. M. A.* after the Cleveland session last June no doubt were impressed with the widespread discussion which was given to the question of establishing procedure for special recognition or designation for physicians engaged in general medical practice. In other words, there was a move toward the creation of a certification board for general practitioners.

Nothing very tangible developed from the discussions at Cleveland. Perhaps it's a good thing. Action now, or even in the near future, would, in our opinion, be premature.

The general practitioner is the foundation stone of medicine. His high place in the practice of medicine must be recognized—we believe it is. As some contend there may be a need for the certification of those engaged in general practice, although one finds many who will debate on the negative side of that issue. However, in our opinion the time is not ripe for such action if for no other reason than because the mechanisms which have been created for the certifications of the specialists are at present far short of perfection. As a matter of fact, the functioning of some of the certification boards is being subjected to severe criticism. Sub-

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1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph., Gon. & Ven. Dis., 23, 201 (March), 1939.

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stantial readjustments in the workings of those boards is inevitable. Some of them will fail to survive unless they modify their procedures.

The Journal of the A. M. A. in an August 30, 1941, editorial intimated that all is not well on the certification front and hinted at some of the apparent deficiencies. Here is what was said in part:

"The medical profession itself has assumed responsibility for adequate training of specialists. Moreover, it has recognized the need for establishing mechanisms by which the public may be able to distinguish those who are competent from those who are merely 'self anointed.' Fifteen examining boards are now functioning, representing as many fields of medicine. These boards examine candidates and issue certificates to those who are found qualified in their respective branches. Before examination the boards require a substantial period of preparation.

"Primarily, the process of certification exists in order that physicians, patients, hospitals and others may be able to identify the well-trained and fully competent specialist. The conduct of these boards should never be such as to cause them to be regarded as a means of creating, for limited practitioners, a monopoly, or of protecting them from competition. Not only would certification in the specialties lose its significance if the public and the profession came to regard it merely as a measure designed to increase the influence and incomes of a small self-interested group, but the result would be inevitably the elimination of the present voluntary mechanism and the substitution therefor of some process under public control. Some of the examining boards demand that all candidates for examination limit their practice exclusively to the field in which they seek to be certified. Such exclusiveness adds nothing to the candidate's ability, which is the qualification about which the public is concerned; indeed, such limitation may interfere seriously with provisions of competent medical services. A board should never adopt or enforce in practice peculiar requirements related to other qualifications than the ability and integrity of the physicians who submit voluntarily to examination.

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Members of the profession may disagree as to whether there should or should not be a certification board for general practitioners. But, we believe, all must admit that present kinks in the administration of some of the existing certification boards should be ironed out before any new board is established.—*Ohio State Medical Journal.*

Sulfathiazole Ointment

An ointment containing sulfathiazole, one of the derivatives of sulfanilamide, appeared to be efficacious in the treatment of pus-producing infections of the skin, Edmund L. Keeney, M.D.; Richard H. Pembroke, M.D.; Ferdinand E. Chatard, M.D., and James M. Ziegler, M.D., Baltimore, report in *The Journal of the American Medical Association* for October 25.

A five per cent sulfathiazole ointment, they say, produced promising results in the treatment of 69 patients with such skin conditions as infected infantile and adult eczema, seborrheic dermatitis, impetigo, common acne, infected hair follicles and furunculosis.

Thirty-five patients with poison ivy blisters, 33 with cuts and four with small second degree burns also were treated with local applications of sulfathiazole ointment. In all instances, the authors report, the condition healed without infection. "This seemed an important observation as physicians generally refrain from prescribing an ointment to patients with acute vesicular dermatitis because of the possibility of promoting a secondary infection."

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TUBERCULOSIS ABSTRACTS

(Continued from page 509)

included in this report. Cases of active tuberculosis are not admitted to the hospital. The population of Washington County is semi-rural and most of the patients were long residents, from all classes of society and of the white race.

Thirty-two of the 165 necropsies were done on children and 133 on adults. For the whole group positive findings were recorded in 65 or 39.4 per cent which is just half of Naegeli's findings, 79.9 per cent, when he included all ages.

Considering only the adult group of 133 cases, the positive evidence of infection yielded 47.4 per cent, again strikingly near one-half the number of adults found to be infected by the earlier researches of Naegeli, Burkhardt, Opie and others. In this series there were five cases where infection was suspected but could not be proved pathologically. If these are included the percentage would stand at approximately fifty.

This finding of almost 50 per cent of positive tuberculosis among an unselected group of a semi-rural population indicates that the frequency of tuberculosis is still sufficient to be alarming. If one

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assumes this experience as typical of the country as a whole, which seems reasonable, we must still face the fact that at least half of all adults have suffered invasions by the tubercle bacillus active enough to leave discoverable scars. This is disconcerting in face of the far greater fall in the death rate from the disease.

At the same time there is some compensation in the discovery revealed by this study that only one-half as many people who have suffered tuberculous infection actually die of the disease as was the case forty years ago. The infection rate has been reduced to 50 per cent, the mortality to 25 per cent of that in 1900. A number of factors have probably contributed to this gratifying preponderance in the decline of the death rate. Better sanatorium care and the management of cases has undoubtedly made a large contribution. The fact that lessening of the infection rate has apparently shown acceleration in the past 15 or 20 years brings comfort both to those engaged in the preventive and therapeutic aspects of tuberculosis control. A 50 per cent reduction in the reservoir of spreaders must certainly mean that fewer contact cases are today submitted to massive and repeated doses of infected material. The contribution of compression therapy and surgery to this result can but be inferred. Those who advocate freer use of these measures certainly would seem to have little for which to apologize in the evidence presented by this study.

However, there are other factors in the picture which perhaps deserve first mention. Isolation is the time-honored scheme for the control of epidemic, infectious disease. It is a significant coincidence that during the period when tuberculosis mortality was reduced to one-quarter its 1900 level and infection rate cut by 50 per cent, the sanatorium beds in this country increased from about 6,000 to 100,000. It would be idle not to recognize this prophylactic procedure as an outstanding influence in lessening opportunity for infection among the general public.

The result of this procedure would have been far more striking had it been possible to arouse the medical profession to its responsibility in finding the early case and effecting its immediate isolation. Unfortunately, ths is one of the weaker links in our control program. From three-quarters to four-fifths of all cases admitted to sanatoria are still found to be in the advanced stages of the disease,

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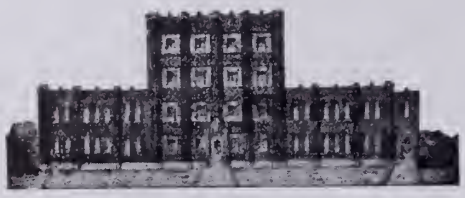

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already probable spreaders of the infection to others. More professional education, both undergraduate and postgraduate is still needed to impress upon physicians how truly further progress in tuberculosis control rests in their hands.

Popular health education and school hygiene have also played their parts in reducing opportunities for infection. Beginning with teaching the infectivity of sputum, the transference of disease through common utensils, uncleanliness in restaurants, the menace of infected food handlers, instruction has proceeded to the point where even an open case is of relatively little danger to his fellows if both he and they will exercise the prophylactic measures now recognized as largely effective.

Finally better housing, elimination of industrial hazards, more applied knowledge of the laws of nutrition, and a growing consciousness of the significance of personal and community hygiene, have played their part in reducing the transmission of tuberculous infection from case to contacts.

A highly significant factor in this study is the observation that reduction of infection as shown at autopsy has been at least as rapid among infants and children as among adults. These younger members of society can make no personal contribution to their own protection. They must rely on that of others, nurses, teachers, parents and relatives. Cutting their infection rate in two as well as that of their elders is clear proof that a better informed public is making an increasingly effective fight against spread of this disease.

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Frost in discussing the eradication of tuberculosis wrote as follows: "Tuberculosis also differs from the other directly transmitted respiratory tract infections in that its mortality has declined consistently for the last fifty years or more and continues to decline in every part of this country for which adequate statistics are available. It is not directly established by comparable statistical evidence that there has been a proportionate decrease in the prevalence of infective cases of the disease, taking into consideration not only the number of cases but duration of the open stage. However, there appears to be no good reason to doubt that the prevalence of open lesions effective in spreading the tubercle bacillus has diminished progressively, and continues to diminish in each considerable period of time."

However, it must not be overlooked that, according to present autopsy records, the reservoir of adults infected with tuberculosis at one time or another in their lives still amounts to half of the population. Therefore, tuberculosis can still flare up again whenever external conditions turn to the worse for the bulk of the people. Without such a reverse there exists the hope that further efforts in the campaign against tuberculosis will some day lead to a complete eradication of the white plague.

Frequency of Tuberculous Lesions at Autopsy by Kurt E. Lande and Georg Wolff, Amer. Rev. of Tuber., Vol. XLIV, No. 2, Aug. 1941.

Double Comfort Standard

Reconciliation of the double comfort standard would greatly simplify the problem of the engineer and would reduce the expense of heating and cooling buildings, C. P. Yaglou, M.S., and Anne Messer, A.B., Boston, declare in *The Journal of the American Medical Association* for October 11, in a report on "The Importance of Clothing in Air Conditioning." Theirs is the seventh report of the American Medical Association's Committee to Study Air Conditioning. From a study conducted by them they conclude "that differences of comfort standards between men and women, and individual differences, are largely due to differences in dress and can be reconciled by adjustments of clothing, according to susceptibility to cold or heat."

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THE TREATMENT AND HEALING OF OPERATIVE WOUNDS*

By HUGH A. BAILEY, A. B., M. D., F. A. C. S.
In Collaboration With
JOHN C. CONDRY, A. B., B. S., M. D.
Charleston, West Virginia

"No one can comprehend the present accurately and profoundly, and look intelligently into the future who is not acquainted with the sources of knowledge or able to follow the roads along which knowledge of the truth has reached us."—(Arturo Castiglioni, M. D.)

The history of the treatment and healing of wounds is as ancient as humanity itself.

This aspect of medical science seems almost to have been borne up in the race of mankind by a process of evolution and transmitted to the individuals by inheritance.

And he who delves into this evolution will not find a continuous progress of an ever and onward ascending process.

The course of this present day knowledge as it progressed from the gods and the spirits of the ancients to the practice of our times has traversed strange and devious paths. At times, forward, being led by precepts and practices of gifted disciples of this healing art, and then, a turning backwards as it were and with it a forgetting of a store of knowledge of a hundred years or more. Errors that seemed to have passed into oblivion would again come to light, and methods that had been advocated and gave promise of definite forward strides were met with war-like opposition.

Hippocrates, Galen, Celsus and a host of others dating back into antiquity expostulated various beliefs, and propounded theories and methods of curious sort, by which to deal with wounds and give them expedient healing. Boiling oil and use of the cautery appears to have occupied a position foremost, and known as the Arabian method. This pseudo barbaric method held its sway until Ambrose

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*Oration on Surgery read before the West Virginia State Medical Association at Charleston, May, 1941.

Pare, born in 1510, a great physician steeped in the knowledge of surgical practice of that era, rebelled against such treatment, and was responsible for the abolition of this form of therapy. He introduced ligation of vessels again, and the application of bandage followed by rest.

Cesare Magati of Scandiano, born in 1579, a wise physician, and a true pioneer of modern surgery, in De rare medicatione vulnerum, written by him in 1616, deplored the frequent exposure of wounds and the introduction of foreign materials, stating that such was conducive to suppuration and putrefaction. He advocated a dressing of simple linen to be not disturbed for a period of five or six days. His teachings, as those of Pare, however, were early forgotten and the age old errors were revived and so lasted well into the nineteenth century.

PRINCIPLE OF ASEPSIS

Following the course of trial and error a lasting principle was slowly but definitely established; namely, that of asepsis. This principle was truly inaugurated by Pasteur in 1857 and the application of it into practical use by Lister, these men, one the discover of micro-organisms and the other the attempted destroyer of them.

Since then strides have been more rapid and achievement more far-reaching, and at this present time asepsis is one of many constituents each equally important in the pursuit of attaining uncomplicated healing.

Thus through this process of evolution and organization the treatment of operative wounds has reached its present state.

Following Lister in this work were Billroth, Von Mikulicz Radecke, Tiersch, Volkman, Esmarch, Von Bergmann, Guyon, Albarran, Sir James Paget, Sir William McEwen, Sir Johathan Hutchinson, Sir Victor Horsely and in America, Gross, Agnew, Bigelow, Fenger, Keen, Senn and Halsted, all pathfinders.

The achievements of these men have been fostered and they are not forgotten. It is obvious that this progress has been gradual but when comparing the older with the modern conceptions and adaptations the contrast is almost unbelievable. Less than a hundred years ago surgery was undertaken with little hope of recovery, suppuration and gangrene were almost routine.

With such an historical background we are not unmindful that this is no recent matter. Yet a review of the literature of recent years reveals to us that it is not replete on so important a subject as the healing of operative wounds; a condition on which the very life of a surgically-treated individual frequently depends.

It brings pause when we find that operative wound derangement of some kind is responsible for near unto forty per cent of mortality or increased morbidity experienced in surgical endeavor. These findings convince us that all investigation is not complete and perfection has not been attained.

So deep is the obligation and so just is it to those unfortunates who seek relief from their maladies and a restoration to health from their attending surgeons by putting their faith and trust in them, that every effort should be put forward to fulfill it. It seems that this obligation can be met only by a continued search into the scientific and humanitarian realms for an ultimate and uncomplicated recovery.

This plea is made to those ever conscientious benefactors of suffering mankind. It is they who attempt to fulfill their part of the contract formulated between themselves and their patients to the best of their abilities.

To those who place the practice of surgery on the low plane of commerce and trade, these words will have been spoken in vain.

With the passing of years the different aspects of scientific medicine have become more segregated. The fields of specialization are more dominant. The rapid advance that is now evidenced has made this segregation and specialization almost imperative. And now it is hardly possible for such an expansive field to be undertaken as a whole by any one human individual.

This statement is not made in an attempt to belittle the age old family physician. There should be all honor and glory to him. It was he who first saw us, who guided us in sickness and in health, and who often partook of that part of final counsellor in the hour of grief. In his parting he will be sorely missed, for there can be no greater comforter, no wiser counsellor, and no more interested being in the welfare of his patients and the community than the family doctor.

The most requisite qualification of a surgeon should be knowledge and employment of the proper methods used in dealing with wounds. Wounds are frequently seen and the surgeon is often called upon to produce them necessarily. Therefore, the treatment of wounds should form a fair index of a surgeon's ability.

Every solution of the continuity of tissue is a physical, bacteriological and biochemical experiment.

An expansive dissertation would be required if an attempt were made to discuss in its entirety wound treatment and healing resulting from the various causes; here only operative wounds will be considered.

We believe that an intelligent understanding is best arrived at by a clear systematic classification of the various phases that must be considered when dealing with this subject.

PREPARATION

In preparing and following up this investigation we have classified the different phases considered under A. Preoperative preparation; B. Operative technique, and C. Postoperative care.

A. Preoperative preparation:

1. The surgeon and operating personnel must be equipped with proper masks, gowns, gloves, etc. Here one has in mind avoiding, if possible, bacterial contamination from the nose, throat and hands in particular. Organisms from these sources, especially from the nose and throat, are well known to be generally very virulent and frequently lead to overwhelming infection of the wound in a relatively short time. A classical example of such a catastrophe, and one with which most of us are familiar is: within a few hours after operation there is a rapid rise in fever and pulse rate, out of proportion to the operative procedure. The patient is cold and clammy and presents the findings of one in profound shock. Unless these symptoms are remembered as being characteristic of overwhelming infection in a recent operative incision the patient will have expired while undergoing treatment for shock before the correct diagnosis is made, and proper treatment will have begun too late. Mason aptly states that these organisms are relatively immune to human antibodies and their growth in proper soil is rapid.

When such an unfortunate occurrence manifests itself all the resources of both patient and attendants must be called upon to combat it. The use of fluids, transfusions, oxygen, the sulfonamides and the free opening of the incisions, etc., are in order.

INSTRUMENTS

2. Instruments and operating room: It is to be remembered that instruments once sterilized may and do act as sources of contamination after a certain amount of use, and the practice of using, washing, and drying, at the hands of a well-meaning surgical nurse and reusing should be discouraged. For the same reason the "sterile wash" at the surgeon's side should, strictly speaking, be considered a possible source of contamination after use and therefore should be changed several times during the course of a lengthy operation. A surgeon has made the remark that "sterile technique in the operating room is a matter of conscience." We believe that such a statement can be aptly applied at this point.

3. Air-borne contamination: Much has been written in the literature about postoperative infection with reference to air-borne contamination. Air-conditioning, canopies, air filtration and ultra violet light have their advocates and undoubtedly serve to reduce the number of bacteria in the air about the operative site. This has been proven

beyond question by Hart. We are mindful of numerous statements having been made that very little incriminating evidence can be attributed to the air of the operating room, but we are of a different opinion and believe that the number of bacteria are in relative proportion to the number of individuals occupying that immediate vicinity. In the light of Hart's convincing evidence, and those of us who agree with him in opinion, we believe that visitors as well as active participants should be rendered as innocuous as practicable from a bacteriological point of view.

TECHNIQUE

B. Operative technique:

1. We are not wholly in accord with the statement that too much attention is paid to asepsis and too little to other phases of treatment and that the normal tissue reaction and resistance can usually overcome the activity of organisms. In dealing with the surgically ill, normal tissue reaction and resistance are frequently impaired and at times practically absent.

Too much attention cannot be paid to asepsis, but equal attention as far as possible should be paid to each phase.

The works of Pasteur and Lister and those others should be ever present in the mind of the surgeon.

Sterilization of the skin is, as we all know, an impossibility, but with our ordinary antiseptics of today and cleansing materials, the operative site can be rendered relatively free from bacteria, and the incision can be made with safety.

It is an old surgical principle that incisions should follow as nearly as possible the direction of the lines of elasticity. Wound healing itself may be little effected by disregarding this principle but the resulting scar cannot be ideal.

Elimination of the skin and fatty tissue edges by means of warm moist towels or so-called "side sheets" is a practice often disregarded. Tissue exposed to light and air becomes dried, somewhat devitalized, and far less resistant. We believe, therefore, that this is a precaution that should not be overlooked and we recommend the practice.

2. Devitalization of tissues very definitely alters and impedes the normal course of wound healing. In a similar way the introduction of excessive foreign material leads to delayed healing and increased scar formation. Tissue at all times should be handled gently. Hand retraction is usually just as effective and far less traumatic than retraction obtained by the use of insensitive metal implements. The force exerted against sensitive tissue by unpliable metal material at times produces an almost irreparable damage.

Sharp dissection whenever possible should be substituted for that of blunt.

The inclusion of excessive amounts of tissue in clamps, ligatures and sutures is to be condemned. Each ligature has its resultant slough of the material included in it and that distal to it. We feel that it is especially important to minimize the amount of foreign material used in the subcutaneous layers; it is surprising how often it is possible to complete an operation without the necessity of introducing one "tie" in the subcutaneous tissues.

HEMOSTASIS

3. The necessity of careful hemostasis cannot be over emphasized.

Formation of a blood clot is the attempt on nature's part to obliterate a cavity. The clot soon becomes adherent to the adjacent tissue, followed by contraction and then organization by fibroblasts in the presence of sterility and granulation tissue in the presence of infection.

The surgeon's method of hemostasis and coaptation of the wound edges is more efficacious than that of nature's. The fibroplastic stage is definitely accentuated and the potential danger of infection in so suitable a medium as blood is obviated. Oozing of blood can often be controlled by warm saline packs and by total elimination of dead spaces.

4. In our enthusiasm to control bleeding it must not be forgotten that wound healing

depends to a great degree on the preservation of adequate blood supply to the part.

As far as possible the larger blood vessels should be retracted and protected. In addition the physiologic fluid and electrolyte balance of the blood must be maintained by judicious replacement and the correction of cardiovascular disturbances.

SUTURE MATERIAL

5. We have been unable to show definitely the superiority of one suture material to another with regard to the subsequent healing of a wound.

This will be borne out farther along in this article by the presentation of 457 consecutive cases of various major operations. Cotton sutures were employed in 339, catgut in 115 and silk in only three.

The use of silk and the investigations as to its reaction to tissue have been extensive. Its virtues are many and its faults few.

In the light of these studies silk was purposely not used in this particular series.

As has been said cotton was employed in 339 of these 457 recorded cases of this series, and we find it a highly satisfactory suture. In our opinion equal to, if not superior to silk.

In these 115 cases in which catgut was used we could find no particular fault with it when used with the care accorded that of cotton or silk.

All in all the sterile non-absorbable materials of fine gauge probably result in less tissue reaction, but on the other hand these same sutures may give rise to very persistent draining sinuses in the presence of even minimal postoperative infection. This though in reality is a small price to pay for a good result.

It must always be borne in mind when using cotton sutures, to obtain a satisfactory result, they must be used as interrupted sutures and should be of fine gauge and single, and used in accordance with the technique laid down by Halsted.

From our observation it would seem that the employment of the silk or cotton technique with the smaller sized chromicized catgut sutures would be a procedure that could hardly be condemned.

The techniques used by us when employing cotton and catgut will be given at the end of this article.

6. Of utmost but not sole importance is the elimination of bacterial contaminants. It is well known that all wounds contain some bacteria, and the number of organisms undoubtedly increases in proportion to the length of time consumed in carrying out an operative procedure. Ordinarily the tissues are usually able to cope successfully with this degree of contamination. This is especially true if there has been a strict adherence to the above principles. When bacteria gain the upper hand toxins are formed with resulting tissue necrosis and exudation. The wound cannot heal until the "destructive action of the invading bacteria is brought to an end."—(Homans).

Bacteria may be introduced by direct inoculation from a diseased process within the body as well as from without as alluded to previously.

We are all familiar with infection that frequently develops in wounds following operations in which there has been a soiling of the peritoneal cavity or a contact made between some intraperitoneal infected process and the subcutaneous tissues. This condition is most often occasioned by acutely diseased appendices.

OUTSIDE SOURCES

According to Meleney the "outside sources" are classified in order of importance as follows: First, the noses and throats of the operating personnel; second, the hands of the operating team; third, the skin of the patient; fourth, the air of the operating room, and fifth, the instruments and materials used in the operation.

7. Drainage: It is generally conceded that drainage should be employed only when there is no question of its advisability. It is of established knowledge that the peritoneum has a far greater resistance to infection than the subcutaneous tissues. A complete and

secure closure of the peritoneal incision is of prime importance. In disregarding this proceure, patients at times come to grief. Healing is definitely delayed and in the opinion of many is one of the most usual causes of disruption.

From a contaminated peritoneal cavity infection may find an easy ingress to the tissues particularly in the presence of a loosely closed peritoneum or when drainage materials are inserted through the incision.

Drainage at times is imperative and when this occasion presents itself, experience has taught us to employ a stab incision located somewhere beyond the immediate confines of the operative incision.

DRAINAGE

8. Irrigation of wounds: We are definitely convinced that the irrigation of wounds following the closure of the peritoneal cavity is a procedure of inestimable value. In our opinion it is one of the chief constituents in securing an uncomplicated healing. Its action, of course, is wholly physical or mechanical, but from our viewpoint, so important is this procedure, we have established it as routine.

Warm physiologic saline solution is introduced into the wound under moderate pressure from a bulb syringe. This procedure definitely aids in cleansing the wound. The removal of debris, bacteria, and blood clots is thereby effected with no trauma to the opposing structures. The tissues so treated are striking by their apparent freshness. One almost imagines that he can see those exposed cells revived again. Vision is made clear even to the depths of the incision and under this clear fluid the origin of each persistent bleeding point can clearly be seen and without difficulty may be secured with a minimum amount of surrounding tissue. We find that this, in itself, is of great advantage.

In no sense do we claim any originality of this procedure but we are lasting patrons of its use. And it is our belief that he who follows this method over a period of time would be loathe to give it up. We cannot help but attribute the uneventful healing of many of these wounds in the presence of definite contamination, at least in part to its use.*

9. Chemotherapy: As a means of combating potential infection the powdered sulfonamides have been employed in the various layers of the wound and in the peritoneal cavity. We were convinced of its effectiveness several years ago when we first began using sulfanilamide crystals, and later powder, in wounds and in infections and in the peritoneal cavity. Absorption both in the peritoneal cavity and in the subcutaneous layers is rapid. Its bacteriostatic action seems to outweigh by far the question of foreign body reactions. These agents apparently do not interfere with the natural course of healing. Such has been our observation over a period of several years. Whereas we deprecate the introduction of ordinary antiseptics within a wound we heartily commend the use of sulfanilamide or sulfathiazole. And in discussing chemotherapeutics we are of the opinion, that in giving sulfanilyl guanidine preoperatively in dealing with lesions of the large bowel, the incident of wound infections is definitely lowered. This appears to be the only virtue of this drug.

10. Finally it is axiomatic that anatomic approximation of tissues is imperative, and it might be added that snug coaptation is the ideal, and tight ligatures are not only unnecessary but harmful.

HEALING

B. Postoperative care:

In an attempt to attain uncomplicated healing of wounds there must be adequate blood supply to the injured area, and immobilization or fixation of it. We are of the opinion that there exists some difference between rest and immobilization or splinting.

It is now universally accepted that the splinting of the extremities in the presence of

*In the literature reviewed no particular series of operative incisions in dealing with clean cases that were treated with irrigation could be found on aspiration.

Dr. R. K. Burford has been employing this method in thyroidectomies and perineorrhaphies over a period of the past sixteen years and has found it highly satisfactory.

wounds whether there be fractures present or not is conducive to more rapid and less eventful healing.

If immobilization of that particular area is complete and can be so maintained out of bed, patients are forthwith gotten out as soon as circumstances permit.

It seems that such activity must surely increase the metabolism somewhat. And the increased heart beat and arterial contraction maintains the blood pressure at its original level. Of course there is exception to this in the presence of marked vasodilatation, which can result in syncope, or fainting. However, such is of short duration and is not usual.

In this light it seems reasonable and physiological to render a similar treatment to wounds elsewhere than the extremities.

CIRCULATION RATE

We are aware of the experimental proof of Lindhard and the substantiation of it by Asmussen, Christensen and Nielson of Copenhagen, and others that the circulation rate is smaller in standing and sitting positions than in lying, but through the compensatory contraction of arterial blood vessels, and the increased pulse rate the blood pressure is not diminished, thus the capillaries both new and old at the site of the injured area are kept constantly replenished.

This in our opinion is an aid to healing. Therefore, we believe that in dealing with operative wounds of the abdomen, dressings should be applied accompanied by a splinting of the abdominal muscles with adhesive tape or some suitable material. Those so treated are lifted into a chair at an early date.

This form of treatment is used, in particular, in dealing with the aged or those beyond midlife. By so doing, important purposes are served; an effort to prevent the development of hypostatic pneumonia, which as Osler states is the friend of the aged, the captain of the men of death. With this friend we are all too familiar. The instance of thrombosis and emboli might probably be reduced. The blood pressure is not lowered and the blood supply to the wound may be increased through compensatory action. In truth it is less hazardous to and less wearing on an elderly individual who has been submitted to operation, than turning on one side and then the other. Each time an operative victim is maneuvered, however gently, he is rendered most uncomfortable in so doing. There are sufficient stimuli applied to call forth all the degrees of irritability and contractility of practically every muscle in his body, which in turn produces what is commonly known as fatigue.

The physician may with ease order the patient to be turned at intervals, and without pain to the attending nurses it is faithfully executed, but to that sick individual it is often an ordeal and in many cases exhausting.

By the use of gentle means a patient can be placed into a comfortable chair with little disturbance. This course has now been pursued in a sufficient number of instances to arrive at a conclusion based on fact. We have had no reason to regret this procedure. There have been no fatalities, no disruptions, no demonstrable herniæ, and we cannot find any incidents of a provoking of the growth of organisms there present in the incisions.

These patients are comfortable and there seems to be a lower incident of complications either local or systemic.

OLDER PATIENTS LEAVE BED EARLY

Those in their sixth and seventh decades have been gotten out of bed as early as twenty-four hours following major abdominal operations.

1. Dressings should be done as infrequently as possible and every reasonable precaution exerted to avoid contamination.

2. Decompression of the gastro-intestinal tract, in our opinion, is worthy of serious consideration. Abdominal distention, vomiting, or any condition that aggravates intra-abdominal pressure is a source of great evil not only to the incision but to the patient generally.

Eviceration, delayed healing, infection, postoperative herniæ, are potent examples of

what distention and vomiting at times are capable of doing.

The introduction of the Miller-Abbott, or duodenal tube carried out after the method of Wangensteen are adjuncts that are second to none in combating the various forms of ileus and persistent vomiting following operation.

This form of therapy has, to a large measure, supplanted enterostomy, which, at its best, is unsatisfactory in the majority of cases, and definitely injurious in the presence of paralytic ileus.

We, as all others, agree that distention and vomiting can be more easily prevented than controlled after they begin to manifest themselves. Early attack on these obnoxious conditions is advocated. By so doing they may be brought under control at an earlier date rather than waiting until they have depleted physiological activity of the intestines and damaged their circulation.

A suction apparatus to obtain the best results should be inserted before, during, or immediately following operation. The impending distention that so often accompanies certain types of cases, and particularly operative procedures, that the surgeon knows by his own experience is likely to occur, is best controlled by early use of these so important adjuncts.

It is true that tracheitis, esophagitis, ulceration, pneumonia, and at times even death may be attributed to these appliances, but such is unusual. All in all their good qualities outweigh the unpleasant ones.

Oxygen in high concentrations is of definite value, and is best administered by the use of the mask.

Small doses of pitressin, although denied by some authorities, have in our experience been of noticeable aid. The employment of prostigmin is of longer duration and probably more efficacious. These same drugs, however, in the presence of mechanical ileus may be capable of doing much harm.

C. Up to this point factors which act more or less locally in affecting wound healing have been concentrated upon, but there is another group of factors which has come to light in comparatively recent times, and which though probably of less importance, must be borne in mind.

THE VITAMINS

We know now that vitamin C plays an important rôle in the restoration of the intercellular structures of divided tissues. This particular vitamin is little stored in the body and its need is increased in certain diseased states, i.e., chronic tuberculosis, pneumonia, osteomyelitis and probably others. Recent studies have revealed an astonishingly high number of low ascorbutic acid blood levels in the ordinary "run of the mill" hospital cases and it is fairly well established that this one factor alone may be responsible for wound disruption.

Vitamin A has its most pronounced local effect on epithelial structure. A deficiency of this vitamin decreases in effectiveness the epithelial barrier to infection. Holman emphasizes the fact that in vitamin A deficiency the pavement epithelium undergoes atrophy, followed by proliferation of basal cells, and keratinizing metaplasia of superficial cells.

It is conceivable that bronchi, glands, etc., may be plugged with keratinized cells and postoperative complications may ensue as a consequence.

Vitamin B is an important growth stimulator and aids in controlling the tone of the gastro-intestinal tract and in regeneration of red blood cells. Vitamin K is of course specific in raising the blood prothrombin level.

As a final factor in wound healing the general nutritional state of the patient must be considered. Carbohydrate and protein metabolism must be maintained. The poor nutritional state of which hypoproteinemia is a manifestation, may predispose to impaired healing and disruption.

Following a careful perusal of the literature extending over a period of more than five years we were unable to find any statistics concerning operative wound healing based on

definite case series. During a period of six and one-half months extending from September 1, 1940 to March 15, 1941, we have been interested in compiling a series of cases that were closely observed during and after operation. This series consists of 457 consecutive major operative procedures, performed on the surgical service of the Charleston General Hospital by Doctor J. E. Cannaday, Doctor R. K. Buford and the writers. Each of these operations was performed by one of us or by the resident or one of the assistant resident surgeons.

TABLE I
CLEAN CASES WITH UNEVENTFUL HEALING

Number of cases	404
Type of operation	Number of cases
Pelvic laparotomy	195
Appendices	99
Hernia	49
Gastric	7
Bowel	8
Gallbladder	28
Miscellaneous	18
Total	404
Suture material	
Cotton	297
Catgut	104*
Silk	3
Total	404
Irrigation	325
Sulfanilamide	72

*Three of these cases developed minimal infection about retention sutures. The wounds in all three cases were clean and dry.

In none of these cases was any drainage material used either subcutaneously or intraperitoneally through the original incision. For this purpose stab incisions were employed.

This series is tabulated in Tables I, II, III, IV and V. In Table I, there are reported 404 clean cases, with uneventful healing. This table includes various operations on the female pelvis, appendectomies, different types of herniæ, gastric and bowel resection, both large and small, cholecystectomies, splenectomies, a few thyroidectomies in which no drainage was used, etc.

Irrigation and aspiration of the wound were employed in 325 cases, sulfanilamide powder was used in 72 of these incisions.

In these 404 cases that underwent uneventful healing, all of the remaining principles as before stated were carried out.

It has been said there could be no definite statement of fact concerning the superiority of one suture material to another. In these cases catgut sutures were used with great care, as were the cotton sutures. All cotton sutures, however, were interrupted.

Silk was not employed extensively due to

TABLE II
GROSSLY INFECTED CASES WITH SUBSEQUENT UNEVENTFUL HEALING

Operation	Pathology	Cotton	Catgut	Irrigation	Sulfanilamide
Appendectomy	Appendiceal abscess with rupture		x	x	x
Appendectomy	Acute appendicitis with perforation, B. coli culture from abdominal fluid	x		x	x
Appendectomy	Phlegmonous appendicitis with marked local peritonitis, B. coli culture from abdominal fluid	x		x	x
Exploratory Laparotomy (bullet wound)	Perforated viscus with gross external contamination	x		x	x
Exploratory Laparotomy	Acute cholecystitis, ruptured gallbladder. No culture		x	x	x
Exploratory Laparotomy	Acute pelvic inflammatory disease with purulent abdominal fluid, organism not identified	x			
Exploratory Laparotomy	Ruptured viscus, hemolytic staphylococcus culture	x		x	x

the fact that the literature now abounds with the pros and cons of the merits of this material. Its value is known and it is accepted as a most satisfactory suture. However, there exists no definite proof, substantiated by clinical evidence, of it or any other non-absorbable material being so superior to catgut as to cause the abandonment of catgut by many able and progressive surgeons who are accustomed to using it, and who have an open mind seeking for facts. We believe that cotton or silk is probably more secure than catgut but mainly due to the entirely different technique employed by so many operators when dealing with catgut.

We again repeat that catgut used with the silk or cotton technique will undoubtedly be found satisfactory; the technique laid down by Halstead.

As to the use of irrigation with warm saline solution, and the application of sulfanilamide directly in the wound we are convinced that they are of inestimable value.

In Table II there are recorded seven cases that were grossly contaminated. All of these healed by primary intention. All were pathologically proven cases. Cotton sutures were used in five cases and catgut in two. Irrigation of the wound following peritoneal closure was employed in six cases and sulfanilamide applied in six.

In Table III the clean cases with subsequent wound infection are presented. Of these there were seven in number. Here it is noted that cotton was the suture of choice in three cases and catgut in four. Irrigation was employed in five, sulfanilamide in three. Both irrigation and sulfanilamide were employed in two but with no apparent success. Culture in three cases disclosed colon bacillus, staphylococcus and streptococcus. The origin of these infections could not be accurately traced. The morbidity was definitely increased but there were no deaths.

CONTAMINATED CASES

In Table IV there are recorded fifteen grossly contaminated cases with subsequent wound infection. Cotton was employed eleven times and catgut four times. Both irrigation and sulfanilamide were used in all fifteen. In this particular group there was one death, a gunshot wound of the abdomen. This patient developed, together with a wound infection, pneumonia with empyema and subphrenic abscess. The morbidity in each case was prolonged.

In Table V for lack of a better term, these cases are classified as potentially infected cases. In this group there are reported 24 cases. The majority of these as will be seen, were cases of phlegmonous appendicitis, with marked local peritonitis and free abdominal

TABLE III
CLEAN CASES WITH SUBSEQUENT WOUND INFECTION

Operation	Pathology	Cotton	Catgut	Irrigation	Sulfanilamide	Comment
Cholecystectomy	Chronic cholecystitis with cholelithiasis	x		x		12 days, postoperative.
Cholecystectomy	Chronic cholecystitis with cholelithiasis		x	x		9 days, postoperative.
Panhysterectomy	Massive fibroid uteri		x		x	8 days, postoperative. B. coli.
Cesarean section	—		x	x	x	12 days, postoperative.
Ventral hernia	Found incidental extopic pregnancy	x		x	x	12 days, postoperative. staph. aureus.
Inguinal hernia	—	x				Early infection of the whole wound. Pure culture, hemo. strep.
Laparotomy	Subtotal hysterectomy		x	x		6 days, postoperative.

fluid. Cultures were taken in only four of these cases, three of which were positive.

Three cases of perforated duodenal ulcer are included in the group, together with a pelvic abscess and a stab wound of the abdomen. All of these incisions healed by primary intention.

It is interesting to note here that cotton sutures were employed in all but two cases. Irrigation and sulfanilamide were made use of in twenty-three of this group.

To summarize this series of 457 recorded cases:

1. There were 411 clean cases operated upon; of this number 404 underwent uneventful healing and in seven, subsequent wound infections developed. The incidence of infection being only 1.7 per cent.

2. Twenty-two cases were classified as being grossly contaminated and of these fifteen developed subsequent wound infection. Seven of the number underwent uncomplicated recovery. Sixty-eight per cent of these twenty-two cases therefore developed infection in spite of every known precaution.

3. In the fifth group, or the one termed as potentially infected, there were twenty-four in number. In none of these cases did infection develop; neither was there any evidence of delayed healing. The percentage of infections, here of course, is zero.

4. The incidence of infection in the combined groups of grossly and potentially infected cases equals thirty per cent. There being a total of forty-six cases with fifteen demonstrable infections. There was only one death.

5. Four hundred and thirty-five of this entire series of 457 recorded cases underwent healing by primary intention; this giving a total of 95 per cent in which there was no evidence of infection or delayed healing. There were no demonstrable irritations at the sites of either skin clips, skin sutures or retention sutures, except in three cases.

6. In considering the bacteriostatic qualities of the sulfonamides, sulfanilamide was introduced directly into the wounds of 119 cases.

7. Irrigation was employed in 374 cases.

8. Cotton sutures were employed in 338 cases, catgut in 116 cases and silk in three cases.

9. The skin incisions were closed in the majority of cases with clips and the remainder with cotton or silk.

TABLE IV
GROSSLY CONTAMINATED CASES WITH SUBSEQUENT INFECTION

Operation	Pathology	Cotton	Catgut	Irrigation	Sulfanilamide	Comment
Appendectomy	Acute appendicitis with perforation	x		x	x	
Appendectomy	Acute appendicitis with perforation	x		x	x	
Appendectomy	Acute appendicitis with perforation	x		x	x	
Appendectomy	Acute appendicitis with perforation	x		x	x	
Appendectomy	Acute appendicitis with perforation		x	x	x	
Appendectomy	Acute appendicitis with perforation	x		x	x	
Appendectomy	Acute appendicitis with perforation	x		x	x	
Appendectomy	Acute appendicitis with perforation	x		x	x	
Appendectomy	Acute appendicitis with perforation	x		x	x	
Appendectomy	Appendiceal abscess ruptured		x	x	x	
Appendectomy	Appendiceal abscess ruptured	x		x	x	
Exploratory Laparotomy	Ruptured viscus	x		x	x	
Exp. Lap. (gunshot)	Ruptured viscus		x	x	x	Died
Exploratory Laparotomy	Ruptured T-O abscess		x	x	x	
Exploratory Laparotomy	Ruptured T-O abscess	x		x	x	

TABLE V

POTENTIALLY INFECTED CASES WITH UNEVENTFUL HEALING. NUMBER OF CASES—24

Operation	Pathology	Cotton	Catgut	Irrigation	Sulfanilamide
Appendectomy	Phlegmonous appendicitis with marked local peritonitis and free abdominal fluid	x		x	x
Appendectomy	Phlegmonous appendicitis with marked local peritonitis and free abdominal fluid	x		x	x
Appendectomy	Phlegmonous appendicitis with marked local peritonitis and free abdominal fluid	x		x	x
Appendectomy	Phlegmonous appendicitis with marked local peritonitis and free abdominal fluid	x		x	x
Appendectomy	Phlegmonous appendicitis with marked local peritonitis and free abdominal fluid (plus non-hemolytic staph. aureus culture)	x		x	x
Appendectomy	Phlegmonous appendicitis with marked local peritonitis and free abdominal fluid (non-hemolytic staph. albus culture)	x		x	x
Appendectomy	Phlegmonous appendicitis with marked local peritonitis and free abdominal fluid	x		x	x
Appendectomy	Phlegmonous appendicitis with marked local peritonitis and free abdominal fluid (beginning abscess)	x		x	x
Appendectomy	Phlegmonous appendicitis with marked local peritonitis and free abdominal fluid	x		x	x
Appendectomy	Phlegmonous appendicitis with marked local peritonitis and free abdominal fluid	x		x	x
Appendectomy	Phlegmonous appendicitis with marked local peritonitis and free abdominal fluid	x		x	x
Appendectomy	Phlegmonous appendicitis with marked local peritonitis and free abdominal fluid	x		x	x
Appendectomy	Phlegmonous appendicitis with marked local peritonitis and free abdominal fluid	x		x	x
Appendectomy	Phlegmonous appendicitis with marked local peritonitis and free abdominal fluid	x		x	x
Appendectomy	Phlegmonous appendicitis with marked local peritonitis and free abdominal fluid	x		x	x
Appendectomy	Phlegmonous appendicitis with marked local peritonitis and free abdominal fluid	x		x	x
Appendectomy	Phlegmonous appendicitis with marked local peritonitis and free abdominal fluid	x		x	x
Appendectomy	Phlegmonous appendicitis with marked local peritonitis and free abdominal fluid		x	x	x
Appendectomy	Phlegmonous appendicitis with marked local peritonitis and free abdominal fluid (staph. albus)	x		x	x
Exploratory Laparotomy	Perforated viscus		x		
Exploratory Laparotomy	Perforated viscus	x		x	x
Exploratory Laparotomy	Perforated viscus	x		x	x
Exploratory Laparotomy	Pelvic abscess with rupture, culture sterile	x		x	x
Exploratory Laparotomy	Stab wound of abdomen	x		x	x

10. Retention sutures were used in only a small number of incisions. However, we are not convinced that retention sutures are of definite material aid. It is well known that infection may be introduced at the time of their insertion as well as at the time of their removal. At this point it is only fair to make mention of the troublesome sinuses that do develop occasionally as a result of employing non-absorbable buried sutures.

In this series there were four of these incidents. They are upsetting and annoying to both the patient and the doctor.

These draining sinuses are much more apt to occur when heavier or doubled sutures are employed. We, as all others, believe that these unfortunate happenings can be largely prevented or diminished by employing fine material, always interrupted, and the sutures should be cut close to the knot.

TECHNIQUE EMPLOYED IN OPERATIVE INCISIONS

The operative site and an ample margin of the skin surrounding it is painted with tincture of merthiolate or iodine and alcohol, after which draping is carried out in the usual manner with towels and laparotomy sheet. The skin and subcutaneous tissues are incised rapidly and the skin edges protected and compressed with flat gauze in order to render the operative site as bloodless as possible. Only if active bleeding occurs are subcutaneous ties used; these are either No. 50 cotton or plain 000 catgut. As was mentioned before we attempt to eliminate subcutaneous ties as far as we are able. The underlying fascia is then incised and moist towels are sutured or clipped to the fascial edges. The muscular layer is retracted to one side or the other; only on rare occasions do we enter the abdomen through muscle. The peritoneal layer is then incised in the usual manner. The closing technique is as follows: Peritoneum is approximated with either running No. 1 chromic catgut or with interrupted No. 30 or No. 50 cotton. The cotton suture is simple or mattress in type. After the peritoneum is closed carefully, the towels are removed and the skin margins are painted either with tincture of merthiolate or alcohol and at this point we employ warm saline irrigation. After irrigation the wound area is redraped with sterile dry towels. The fascial layer is closed with catgut—No. 1 chromic, running suture or interrupted—or cotton, single interrupted No. 30 or No. 50. The subcutaneous fat and Scarpa's fascia are approximated with catgut—00 or 000 used interruptedly—or cotton No. 50 interrupted. The skin edges are approximated with skin clips, at times supplemented by very superficial No. 50 interrupted cotton sutures. We rarely use stay sutures, but for that purpose kaldermic or No. 10 cotton is employed and tied loosely. For the ordinary ligation of bleeding vessels catgut 00 or 000 or cotton No. 50 are used.

11. The various aforementioned forms of therapy, both local and systemic, were carried out in this series, when in the opinion of the attending men, they were indicated.

12. In this total series of cases, there was one death. There were no wound diruptions;* neither have any postoperative herniæ been reported.

This series of cases and data bearing on wound healing has been compiled with great care by Doctor John C. Condry, one of the assistant resident surgeons of the Charleston General Hospital.

Although this dissertation is limited to operative wounds, many of the same principles can be adapted, with advantage, in dealing with other types of wounds.

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SOME RHINOLOGIC ASPECTS OF CHRONIC BRONCHIAL ASTHMA*

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In order to clarify this subject, one must first recognize that there are two groups of asthmatics—the so-called "extrinsic" group, the exciting cause of which is contact with some specific allergen to which the individual is sensitized and with which he comes into contact through the skin, respiratory or digestive tracts, and from some source outside the body. The other group is most often labeled "intrinsic asthma" and in which no such external excitant is found. Some authors call it infectious or bacterial asthma. The first group comprises approximately 65 per cent of the cases of chronic bronchial asthma, and the latter roughly 35 per cent.

In the study as well as the therapeutic regimé of the extrinsic type one must still go further and determine if the condition is pure allergy, or allergy mixed with infection; and if infection is present, whether it is acute, subacute or chronic. Many disappointing results will be forthcoming if this phase of the study is neglected. An example of this is the patient suffering with chronic allergic rhinitis with a superimposed acute infectious coryza. Here, almost over night, from an area of mild polypoid degeneration such as may be found on the lips of the hiatus semilunaris, the maxillary ostium, or the individual ostia of the ethmoid cells, considerable sized, transparent, edematous polyps may form. Surgical interference with these is not indicated as they disappear rapidly when measures are instituted to relieve the congestion and edema incident to the acute infection.

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At this point, I want to mention a valuable adjunct in the matter of differential diagnosis, and that is the routine cytological and bacteriological study of nasal and bronchial secretions. The nasal secretions may be obtained by having the patient blow his nose on cellophane paper and the material transferred to a microscope slide, and after gently heating the slide for fixation the following technique of staining will give a nice contrast stain which will enable one to differentiate the eosinophils from the neutrophils as well as staining the bacteria:

One drop of Giemsa stain is added to one c.c. of distilled water. It requires about 1.5

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c.c. for each slide which should be flooded. The stain should remain on the slide for twenty-five to thirty minutes. It should then be poured off and the slide dipped gently into distilled water. If the slide is stood on end on filter paper, it drains and dries quickly and is then ready for the microscopic examination. Thick, grossly visible areas may be examined first with the low power and then with the high power or better with the oil immersion. In examination of the smear the eosinophils may be noted with their characteristic coarse red granules. The cytoplasm stains very faintly, but the nuclei stain dark.

Hansel has recently developed a staining technique utilizing a 1/200 solution of eosin in methyl alcohol and a 1/1000 solution of methylene blue in methyl alcohol whereby the total time for staining takes approximately five minutes. He states that this technique has proved much more consistent and satisfactory than the Giemsa method.

In the cytologic interpretation, one must take into consideration the type of secretion obtained for examination. If the material is extremely thin and watery the cellular content is likely to be extremely small, while on the other hand thick clumps of heavy mucoid material will usually show a very heavy cellular content. In making the microscopic examination, occasionally one finds masses of neutrophils which take the eosin stain in excess, and may closely resemble eosinophils, but on more minute examination under oil immersion it will be noted that true granules are not present.

DISTRIBUTION OF CELLULAR CONTENT

Another factor is very important in the interpretation and that is the distribution of the cellular content. It will be remembered that the neutrophilic response as a rule outnumbers the eosinophilic response in the ratio of about ten to one. A one plus number of neutrophils hence represents about ten times as many eosinophils. As a result, a smear with four plus neutrophils, the field is completely covered with them. Hansel and Vaughan consider the finding of clumps of eosinophils of considerable diagnostic importance.

Any obstructive condition of the nose, such as a bad deflection of the septum, nasal polypi, hypertrophied turbinates, allergic rhinitis, etc., will cause a stagnation of the secretions with resulting infection. Here again the neutrophilic response will be exaggerated due to the resultant infection. This also is true in those conditions where there has been widespread destruction of the ciliated epithelium of the nose and its replacement with non-ciliated cells. Here the deterred movement of the secretions due to the loss of the cilia produces stagnation and infection.

CYTOLOGIC FINDINGS

In recording the cytologic findings, the question arises as to what percentage of eosinophils constitutes a diagnostic number. Here, individual experience in examining many slides and correlating the findings with the patient's symptoms and physical findings, will enable one to give proper evaluation and interpretation of the picture. The importance of making repeated nasal or bronchial smears as a follow-up study cannot be overemphasized. An example is the perennial allergic rhinitis patient or one suffering with chronic vasomotor rhinitis with a superimposed infection. The first smear may show a plus minus number of eosinophils and a three plus number of neutrophils. Here the picture is definitely one of infection. A smear from the same individual one week later will probably show a three plus eosinophil with a three plus neutrophil response. On examination of this smear, one will have learned that in addition to infection, one is dealing with an allergic patient, and later smears will usually show a predominating eosinophilic response unless there is continued stagnation of secretions or a persistent chronic infection in which case a varying number of neutrophils will continue to be found.

Smears made in cases of nasal polypi present an interesting picture. Those of allergic origin nearly always show a preponderance of eosinophils unless there is marked stagna-

tion, and even here the finding of many clumps of eosinophils enables one properly to diagnose the case. Conversely the nasal smears from the cases with polypi of infectious origin will always show a profound neutrophilic response which definitely classifies the condition.

The scheme for recording the cytology of nasal secretions as developed by Hansel is very convenient and is illustrated below:

E—One plus minus: Few scattered eosinophils.

E—One plus: Many eosinophils, may be clumped.

E—Two plus, three plus, four plus: Eosinophils very numerous, large clumps.

E—One plus minus; N—One plus minus, one plus: Few scattered eosinophils and neutrophils.

E—One plus minus; N—Two plus, three plus, four plus: Few eosinophils and numerous neutrophils.

E—One plus; N—One plus minus, one plus: Many eosinophils and neutrophils.

E—One plus; N—Two plus, three plus, four plus: Many eosinophils and numerous neutrophils.

E—Two plus, three plus, four plus; N—One plus minus, one plus: Eosinophils very numerous, many neutrophils.

E—Two plus, three plus, four plus; N—Two plus, three plus, four plus: Eosinophils and neutrophils very numerous.

What has been said above regarding nasal and bronchial secretions applies equally well to secretions aspirated or washed from the sinuses. Here you may be dealing with a purely allergic edema which may be acute and extremely transient or it may be chronic. Here, properly made x-rays of the sinuses, either with or without lipoidal or 20 per cent neosilvol solution, will be a great deal of help in differentiation of an allergic edema from true infection. The allergic edema of the sinuses produces a relatively pale shadow of uneven density, the margins of which are convex shadows of multiple globules and which do not parallel the bone shadows. True hyperplasia of the mucosa is much more dense, casting even shadows which usually conform to the bony walls.

Transillumination of the sinuses in allergic edema is very often misleading due to the fact that the edematous mucous membrane and polypi are more or less translucent, and the resulting picture most often will be that of a "clear sinus" unless there is in addition chronic infection with its resultant fibrosis and cellular infiltration.

DIFFERENTIAL DIAGNOSIS

Getting back to our original discussion of extrinsic and intrinsic asthma, the matter of a differential diagnosis presents itself. In the extrinsic type, one can most often, by a carefully taken history elicit certain contacts to offending allergens which brings on asthmatic seizures. A few examples from my private cases will illustrate this point. First, a lady aged 60 years with asthma of 20 years' duration. On questioning her it was found that during the winter months she spent most of her time quilting. In retrospect, she remembered that she always wheezed while working on her quilts; however, she blamed the cotton lint and dust for her asthma. She also stated she had asthma in the summer after eating salads with mayonnaise salad dressing. On doing the food test, she gave a four plus reaction to cottonseed on the scratch test. Avoidance to cottonseed oil in her salad dressings and changing her vocation in the winter time sufficed to relieve her.

Another case—that of a lady aged 21 years who worked in a company store, who always had a sneezing spell and some wheezing each afternoon at 5:00 p. m. On questioning her, it was found that at that hour the janitor swept the storeroom stirring up much dust. While doing the allergic study with the inhalent group of allergens, it was noted that she gave a four plus reaction to a stock dust extract in the dilution of 1/10,000. Hyposensitization with increasing strengths of an autogenous dust extract from the store and her rooming house plus avoidance effected her relief. Many more such exposures, such as to feathers, pets, pyrethrum (found in insecticides), orris root (found in cosmetics, dentifrices, etc.), animal danders, occupa-

tional exposures such as a druggist sensitive to ipecac, novocaine, butyn, etc., could be named if time and space would permit.

Upon skin testing the extrinsic case, many positive reactions are found. The leukopenic index is positive to most of the foods to which he is sensitized. By means of the passive transfer tests, circulating reagins created by food to which he has become sensitized may be demonstrated in his blood.

On the other hand, the intrinsic type of asthmatic gives very disappointing reactions on skin testing, and very few, if any, reagins can be demonstrated by passive transfer. However, the history will most often elicit the fact that he has most of his asthmatic seizures during or following upper respiratory tract infections.

THERAPEUTIC MEASURES

Regarding the therapeutic measures to be instituted, conservation should be practiced. Obstructing polyps should be removed, particularly if there is not a speedy response to allergic therapy. Submucous resection is not indicated unless for the relief of contact and definite obstruction. Turbinectomies in my opinion should never be done. As for chronic sinus disease, the more conservative measures such as antrotomies, fracturing of the middle turbinate over toward the septum, etc., should be tried first so as to produce better drainage and aeration. Then if, after a sufficient time interval in which the patient is being given allergic therapy as well as treatment of the sinus condition, there is an unsatisfactory response, more radical measures should be instituted and the operation of choice performed.

Roughly 75 per cent of the extrinsic group of asthmatics get satisfactory relief through allergic therapy. There is the residual group of extrinsic cases, probably about 25 per cent, and the entire group of intrinsic cases in whom relief may sometimes be secured through rhinologic treatment.

In my series of intrinsic cases, I have had a certain number who have been greatly benefited by the use of autogenous vaccines; in others, however, it has been very disappointing.

To illustrate further the above points which I have tried to bring out, I am reporting the following cases:

CASE REPORTS

Case No. G. H., 14: A female, age 38, housewife.

Family History: Grandfather died of asthma, one aunt had asthma, and two cousins had hay fever.

History of Previous Illnesses: Ordinary diseases of childhood; had polyps removed in 1926, 1928, 1933, and 1936.

Chief Complaint: Nasal blockage, watery discharge and asthma of about five years' duration, generally starting early in the fall and lasting until the next spring. She had had an allergic study made in a southern clinic in 1935, and was found sensitive to a number of foods as well as several inhalants. Food avoidance and desensitization with inhalants only gave very slight relief, and she continued to have several attacks of asthma during the fall and winter months with frequent admissions to the hospital for oxygen therapy. Rhinologic examination revealed the following:

Nose: Mucous membrane very pale and edematous. Shrinkage with one-half per cent ephedrine solution revealed the septum to be normal, but the upper recesses of the nose were filled with polyps springing from the ethmoid region. A nasal smear showed eosinophils three plus, and neutrophils one plus. Transillumination showed the maxillary sinuses dark, but the frontals fairly clear. X-rays showed enormous thickening of the mucosa of the maxillary sinuses with some polypoid formation.

A routine allergic study was made in September, 1938, and the reactions to foods as well as the inhalant materials did not materially differ from her previous study. Again food avoidance and desensitization proved of little value as she continued having severe paroxysms during the winter of 1938. During the spring of 1940, I referred her to another clinic for an allergic study. Since she had most of her asthmatic attacks in her own house and most often was relieved by change of environment, I suspected a mold as being a possible factor, but exposure of petri dishes with Saboraud's media revealed no growth.

She was again placed on food avoidance and a desensitization regimé and improved until cold

weather when she began to have severe paroxysms of asthma. At this time her bedding was investigated and from a heavy comfort which was padded with a very dirty, low grade wool, the mold Mucor was grown. Scratch tests with the concentrated extract gave a wheal with pseudopod formations that was 2.5 cm. in diameter. One-tenth c.c. of a 1/100,000 dilution of the mold extract gave a huge wheal formation followed by an asthmatic seizure within ten minutes.

The avoidance of the comfort and desensitization with the mold extract brought rapid relief from her asthma and a rapid return to normal of the nasal mucous membranes and disappearance of her polyps.

Case C. S., 73: A male, aged 35, single, occupation—miner.

Family History: Negative.

History of Previous Illnesses: Ordinary diseases of childhood.

Chief Complaint: Asthma of two years' duration, most often following colds.

An allergic study on this patient gave the following reactions:

Positive Reactions: Apple, chocolate, carrot, wheat, pear, parsley, rice, corn, grape, celery, grapefruit, onion, okra, parsnip, coffee, milk.

Among the inhalant allergens, he reacted to feathers, tobacco, kapok, goat hair, rabbit hair, and pyrethrum.

Rhinologic examination showed the nasal mucous membrane to be pink in color. The septum was deviated to the right due to former fracture from a blow on the nose. Obstruction of the right nostril was about 75 per cent. A moderate amount of purulent secretion was seen covering the middle third of the right inferior turbinate. The left nostril was free of any discharge. Transillumination of the sinuses showed the right antrum dark and the remainder of the sinuses clear. X-ray of sinuses showed a chronic infection of the mucous membrane of the right antrum with granulation tissue present.

Smear From Nose: Eosinophils, plus minus; neutrophils, four plus.

Food avoidance and desensitization to the offending inhalants for a period of six months gave only slight relief as he continued to have severe paroxysms of asthma following head colds with its concomitant flareup of the sinus condition. At this juncture a Caldwell-Luc operation was performed on the right antrum with subsequent relief of the asthma and ability to return to his former occupation.

Case No. B. M., 45: Female, aged 30, married.

Family History: Father's sister had asthma.

History of Previous Illnesses: Pneumonia 15 years ago and had the ordinary diseases of childhood.

Chief Complaint: Asthma of 26 years' duration, most often following an attack of bronchitis.

Allergic study revealed the following reactions: Very mild reactions to tea, oyster, milk, peanut, almond, pecan, spinach, radish, blackberry, and currants.

To the Inhalants: Mild reactions to goose feathers, cotton, and dust in a concentration of 1/10.

She reacted negatively to all the pollens.

Rhinologic Examination: The nasal mucous membrane was pink in color, the septum normal. Transillumination of the sinuses showed them all to be clear.

This patient was instructed to avoid the foods to which she reacted positively and was given desensitization treatment with the offending inhalant allergens. She continued to have asthma for the next three months when an autogenous sputum vaccine was made. She was immediately relieved of her asthmatic seizures and has had no trouble to the present time, a period of six months.

CONCLUSIONS

1. Every asthmatic patient, in addition to carefully made tests for food, inhalant, or contact sensitizations, should be entitled to a well taken history, a complete physical examination with emphasis on the rhinologic investigation and cytologic studies. In this manner, it is an easy matter to differentiate the extrinsic from the intrinsic group and a more careful therapeutic regimé can be planned.

2. In dealing with nasal polyps, one should always ascertain whether they are of allergic origin or coming from infection of the sinuses. If allergic, they should not be removed until

a fair trial with allergic therapy has been given, e.g., Case G. H., 14.

3. Surgical procedures on the nose and sinuses of extrinsic types of asthmas should be avoided until allergic therapy has been tried. Then if satisfactory progress has not been made, the surgical operation of choice should be performed, e.g., Case C. S., 73.

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THE POSTPARTUM CARE OF THE CERVIX

By CHARLES GOODHAND, M. D., F. A. C. S.
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It is the aim of every obstetrician to give the pregnant woman the best prenatal care, and to leave her in good physical condition after childbirth. At the present time the safety of labor in a properly managed maternity has become so great that the mortality approaches a very low figure and, of course, this is exceedingly gratifying.

We are still lacking, however, in the attention given to some of the common lesions which are caused by labor. A rather large part of gynecologic operative work concerns itself with the repair of the damage done by labor. Because of these facts, it is certainly time to consider some of the minor complications, and try to decrease their frequency.

Almost all lacerations of the cervix result from childbirth, and the great majority of all cervices show some degree of laceration. Inspection of a large number of cervices a few weeks or months after labor will show a large number of pathologic lesions. Routine postpartum examination is not done by the majority of practitioners, even at the present time. Pathology varying from a small area of erosion to deep or multiple tears, and extensive erosion and ectropion with large bleeding areas may be found. These findings should no longer be casually dismissed. A proper regard for the welfare of the patient demands first that such pathology be prevented if possible and, second, that it should be treated if it does occur. The patient so afflicted as the result of her labor or labors, complaining of a sense of weight and pelvic pressure, backache, leukorrhea, and possibly sterility and various nervous manifestations, is a familiar type. Of even more serious import, cancer frequently originates in one of these lacerated, everted cervices and, furthermore, the importance of the infected cervix as a focus of infection for the pelvic viscera, and distant body points must be considered.

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It was formerly taught, and the belief is still rather widespread, that the cervix should not be sutured unless it be done for hemorrhage. In the absence of an alarming hemorrhage from a lacerated cervix, it is generally ignored and the physician proceeds with the repair of the lacerated perineum or episiotomy. This procedure is contrary to modern surgery. It is very poor and incomplete surgery to correct one pathologic condition and neglect another adjacent to it. May we pause here to state emphatically that the

prerequisites for the proper handling of obstetric complications are: a suitable environment with sufficient help and physical equipment and, of course, ample training and ability to carry out the procedure properly.

The obstetric surgeon should consider it part of his duty to make a routine inspection of the vagina and cervix after delivery, and repair all lacerations that are found. For years no one has contended against the repair of the lacerated or incised perineum and, carrying this reasoning further, it is equally as logical to repair a cervical injury.

LACERATIONS

There are several large series of cases reported in the literature in regard to cervical lacerations. The incidence of most of these reports vary from 60 to 80 per cent. We have found an incidence of 64 per cent of some degree of cervical laceration, two cm. or more, in 100 consecutive cases. The most common causes of damage to the cervix as reported in the literature, and as observed are: short and intense labors, injudicious use of pituitrin, using forceps before complete dilatation of the cervix, manual dilatation of the cervix, and previous old cervical laceration with scar formation. Many cases present lacerations with no demonstrable reason for their occurrence. Some other observations that may be of interest are:

(1) Left-sided cervical lacerations are more frequent than right-sided. It has been found that in about one-fifth of patients with lacerations, they are bilateral. Tears of the posterior lip are usually rather extensive.

(2) A very high percentage of cervical tears follow version and extraction, and also instrumental rotation of the fetal head, especially the Scanzoni maneuver. Manual rotation of the head as a rule gives a much lower incidence of laceration.

(3) There is a much higher incidence of laceration in the O.P. presentation and position than in the O.A.

(4) Premature rupture of the membranes has but slight, if any, effect in increasing the incidence of laceration.

(5) Lacerations are about equally divided between primipara and multipara.

(6) Hemorrhage from cervical tears occurs in a rather small percentage of cases.

(7) The extensive lacerations occur more frequently with the larger babies.

(8) There is no evidence in the literature nor have we observed that previous primary repair of the cervix causes any subsequent increase in cervical dystocia.

In repairing cervical lacerations, and in order to obtain so satisfactory results, it has been found that certain rules must be followed. Adequate exposure is, of course, the first essential. Traction must be made evenly on both sides of the tear, and this can readily be done by the use of light sponge forceps. The sutures used should be interrupted, and should include the outer mucosa and muscle, not the inner mucosa. It is important that a suture be placed at the apex of the laceration. Undue tension must be avoided in the tying of these sutures. Cervical or vaginal packs are generally to be avoided as they frequently increase morbidity.

The inspection and repair of cervical lacerations when found in the manner outlined gives very satisfactory results. In some cases we see moderate erosion in spite of repair. The obstetrician's period of observation should include at least one examination six to eight weeks after delivery. At this time the condition of the cervix will be noted. Any erosion or ectropion found can generally be treated satisfactorily by a radial cauterization of the cervix, using the small electric cautery.

Pathology of the cervix may often be prevented or lessened by routine inspection of the cervix if possible, and the correct repair of any lacerations present.

SUMMARY

(1) All cervices should be inspected following delivery, if in a suitable environment.

(2) All cervical lacerations two cm. and longer should be repaired.

(3) The cervical repair must be done in a correct manner to give satisfactory results.

(4) Cervical lacerations occur under a

great variety of conditions, and with spontaneous deliveries as well as operative cases.

(5) Cervical repair lowers the incidence of later pathology of the cervix.

(6) Any late pathology of the cervix should be corrected when found, in the most suitable manner. The fine electrocautery has a definite place in this therapy.

THE ROLE OF CHEMOTHERAPY IN THE PREVENTION AND CONTROL OF SPREADING INFECTIONS*

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SURGERY ond internal medicine were originally practiced by the same individual much as they are now in many of our smaller communities. Many priests for a time fulfilled the functions of the complete physician, but gradually the feeling arose that the practice of surgery was definitely inferior to that of medicine and in about the thirteenth century the church of Rome forbade the priesthood to practice surgical procedures. It was during this period that there arose that long line of "barber surgeons" who made so lasting an impression upon our art. One of the greatest of the barber surgeons was Paré, the Frenchman.

Paré was particularly interested in the repair of tissues and at the same time a very human person for writing on wounds of the face, he said: "Seeing a wound of the cheek seems to require a suture, it must have a dry suture, lest that the scar should become deformed. For that deformity is very grievous to many, as to women who are highly pleased with their beauties."

In a moment of rare wisdom he stated: "But it is agreeable to reason, that the chirurgeon, professing the disease easy to be cured, will think himself in credit-bound by such promises and his duty, and therefore seek all means for the quick recovery of the patient; lest that which of its own nature is small, may by his negligence become great."

I have had the good fortune to have with me during the past few years a group of young men interested in the fundamental principles of wound healing. They are studying the relation of certain biological factors to fibroplasia; the time worn problem of skin sterilization; the effect of antiseptics on wound infection; the effect of wound infection on the rate of repair; the mode of action of certain of the new chemotherapeutic compounds and their effectiveness in the prevention of infection and, once infection has been established, its control; the effect of such substances on wound repair, and finally the methods by which certain tissues may be protected from injury and maximum repair facilitated once degeneration and necrosis have taken place.

It is these studies I should like very briefly to review with you today, not chronologically, for although there has existed a general scheme upon which we are working, circumstances and other factors have permitted the completion of some phases of the work before others were beyond the stage of initial exploration. What I shall have to say, therefore, will not deal exclusively with wounds or

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chemotherapy for I am using both in a very broad sense.

In much of the work which I shall relate I have played but a minor rôle. As I look back over the past few years I can, nevertheless, feel a deep satisfaction from the fact that in bringing a group of young men to our department, I luckily brought one, Doctor John S. Lockwood, who had had training in bacteriology. In these days when much that we are doing in our laboratories of surgical research concerns itself with physiology and biochemistry, we are apt to forget that one of the major problems with which we are confronted is the prevention and control of infection.

SKIN ANTISEPTICS

It is interesting to look back over the past fifty years and to see how often, as the result of careless clinical investigation and more often blatant pharmaceutical advertising, surgeons have adopted one method of skin preparation after another. From the introduction of tincture of iodine, to picric acid, to gentian violet, acriflavine, the organic mercurials with or without acetone and alcohol, to the more recently introduced wetting agents which provide bacteriostasis by altering surface tension, we have passed merrily along, each time believing that at last we have accomplished the maximum of skin bacteriostasis only to find that what once gave great promise was actually little, if any, better than a previously used agent. The only profit was to the manufacturer. Ours is too often a very gullible profession. We do not now know whether any of these substances are better than a simple soap and water scrub and the application of alcohol or acetone or both.

As far as Doctor Hatfield and Miss Lynch, who are studying this problem in our laboratories have gone, a good soap and water cleansing, followed by alcohol 95 per cent by weight, colored if you wish, with any dye, rubbed on for two to four minutes provides a very satisfactory method of skin preparation.

THE USE OF ANTISEPTICS IN WOUNDS

What has been said of the skin applies to an even greater degree to wounds. Many of the substances used in wounds are protoplasmic poisons; they may influence bacterial growth but they also influence cell growth. It is, in fact, often a source of amazement to me that wounds heal at all when they are daily exposed to agents which retard healing.

Smith, Czarnetzky and Mudd have shown that many of the antiseptic substances, especially the mercurials, when in contact with small amounts of serum protein become completely ineffective as bacteriocidal or bacteriostatic agents. Under such conditions large amounts of mercury become bound to protein and are ineffectual for bacteriostasis, but the remaining dye leads us to believe that the antiseptic is still functioning.

The heavy metals have a profound influence on enzymatic reactions and the failure of many wounds to heal while they are being exposed to large amounts of some of these substances is without doubt due to our zeal in attempting to produce a sterile wound. The studies which Smelo made in our laboratory demonstrated that tissue cultures exposed to many of the mercurials failed to survive when only a fraction of the concentration suggested for wound therapy by the manufacturer was used. In a continuation of these studies Anderson demonstrated that surface contamination or infection of otherwise clean wounds did not interfere with wound healing according to the Carrel-DuNouy formula. Only if active infection was in the tissues around the wound or if necrotic tissue, which acts as a superb culture medium for bacterial growth, was present was healing delayed. Anderson suggested that the continued usefulness of Dakin's solution was due to its ability to cause the solution of necrotic tissue, thus providing the means for wound healing.

While these generalizations are, I am sure, true for a wide variety of the commonly used antiseptics, there has within the last few years become available certain substances which,

while they are possessed of great bacteriostatic effect, have little, if any, untoward effect on the tissues with which they come in contact. I refer to the sulfonamides. That their intelligent use has revolutionized the treatment of many infections is no longer a matter for debate, for it is a matter of record. Sulfanilamide, sulfathiazole, and even the more recently prepared sulfanilyl guanidine and sulfadiazine will, without doubt, play an ever increasing rôle in the prevention and control of a wide variety of infections.

TENSIL STRENGTH OF WOUNDS

Bricker and Graham have reported that sulfanilamide interferes with wound healing but Taffel and Harvey have found that the tensile strength of healing gastric wounds in animals receiving sulfanilamide is the same as that of control wounds. Zintel and his co-workers in our laboratory have confirmed these findings, and in addition found that sulfanilamide does not interfere with the healing of cutaneous wounds. Furthermore, Key and Burford have shown that experimental compound fractures heal just as rapidly when treated locally with sulfanidamide as do controls.

Here then we have a group of substances which, when intelligently used, may add effectively to our methods of wound treatment. I shall later relate our experiences in this direction, but before doing this I should like to consider with you some aspects of the mode of action of sulfanilamide, together with certain fundamental problems of wounds as they may relate to treatment with these substances. The concepts which I shall advance are those of Dr. John S. Lockwood, who has had charge of the Laboratory of Surgical Bacteriological Research in the Harrison Department for three and one-half years. His brilliant work has aided greatly in our knowledge of the mechanism of action of these substances and provides a rational basis of explanation of their effectiveness in certain surgical infections. These studies have been confirmed and extended by other investigators, both here and abroad.

The experimental approach in our laboratory has been directed at attempting to reproduce in vitro the conditions which characterize effective sulfonamide action in the living subject, and to study in this way the factors which tend to modify the magnitude of the drug effect. It was first observed that small numbers of hemolytic streptococci were unable to grow actively for more than one or two hours in human serum containing concentrations of sulfanilamide similar to those easily produced in the body fluids by ingestion of the drug. In the absence of the drug the same organisms were able to multiply with maximal rapidity in human serum for a number of hours. It appeared that the principal effect of the drug was to render the human serum incapable of satisfying the nutritive requirements of bacterial cells. However, if large numbers of streptococci were added to the serum this "bacteriostasis" did not occur. Also if a very small amount of some product of the enzymatic degradation of protein, such as peptone, were added, the bacteriostatic effect of sulfanilamide was greatly impeded. It seems that sulfanilamide has the effect of disrupting some nutritive mechanism which is essential to the bacteria, but that an alternative mechanism of growth is made available to the cells if peptone is present in the medium. There is a definite quantitative relationship between the number of bacteria present, the amount of proteolytic products present, and the concentration of sulfonamide required to inhibit bacterial growth. McLeod of the Rockefeller Institute, has now demonstrated that enzymatic digestion of most animal tissues tends to liberate substances which antagonize sulfonamide bacteriostasis. Another powerful inhibitor of sulfonamide action is p-aminobenzoic acid, a substance very similar in structure to sulfanilamide itself, and perhaps related in its properties to the inhibitor substances in laboratory peptone and broken-down tissue. Woods, who discovered the inhibitory properties of p-aminobenzoic acid, believes that this substance is an intermediary metabolite

in bacterial growth upon the utilization of which depends the continuation of reproductive activity. Sulfanilamide bears such close resemblance to the essential metabolite that the bacteria are literally fooled into taking on sulfanilamide, which has no nutritive properties, instead of p-aminobenzoic acid, which has. This general process, called "competitive enzyme inhibition" is a phenomenon which is well recognized in the field of enzyme chemistry. It provides a somewhat more specific explanation of the mechanism of the action of the sulfonamide compounds than was hitherto possible, particularly if it can be shown that the nature of the inhibitory action of the proleolytic products on sulfonamide bacteriostasis is similar to that of p-aminobenzoic acid. These observations are matters of immediate practical importance in relation to sulfonamide therapy.

SULFONAMIDE THERAPY

1. A theoretical explanation is provided for the ease with which non-necrotizing lesions such as erysipelas and diffuse streptococcic cellulitis are controlled by sulfanilamide therapy, while infections characterized by extensive tissue necrosis and early suppuration, such as staphylococcic abscesses, may respond only slightly to treatment with even more powerful drugs, such as sulfathiazole.

2. In the pathological process of tissue invasion by bacteria, necrosis and suppuration occur only after irreversible damage from bacterial toxins and tissue enzymes has taken place. Sulfonamide therapy begun before extensive local tissue breakdown will be far more destructive to the bacteria than treatment initiated later, when the bacterial environment has become richly supplied with nutritive substances, at which time the sulfonamides can no longer readily influence bacterial metabolism. Therefore, sulfonamide treatment should be started early.

3. Since the sulfonamides do not actually destroy the invasive bacteria, but only terminate their growth activity, it is important to encourage the activity of phagocytes, which can serve as scavengers to destroy the "starving" organisms. The great effectiveness of sulfanilamide therapy in peritonitis is undoubtedly due in no small part to the splendid equipment for cellular defense against infection which characterizes the peritoneum and other serous membranes.

When the surgeon wishes to employ one of the sulfonamides to prevent invasive infection in wounds which are grossly contaminated he may be certain that he will greatly increase the effective action of the drug by leaving within the wound only the least possible amount of devitalized tissue and the smallest possible number of contaminating bacteria. As soon as any area of tissue loses its blood supply the pH tends to fall toward the acid side, and this shift activates proteolytic enzymes. This mechanism is a very useful means of dissolving and disposing of dead tissue in order to clear the way for repair, but while proteolysis is in progress, contaminating bacteria enjoy a plentiful supply of "foodstuffs", and at the same time conditions are least favorable for restriction of their growth activity by sulfonamides. It is, therefore, desirable in treating compound fractures and other traumatic wounds to remove as much as possible of the tissue likely to undergo proteolysis. Practices such as debridement and thorough wound irrigation, which have long been of accepted value in traumatic surgery, are by no means displaced and in fact are given new meaning and even greater effectiveness when used in conjunction with sulfonamide treatment.

BACTERIOLOGIC CONSIDERATIONS

Quite apart from the matter of the action of the sulfonamides, there are a number of bacteriologic considerations which are of importance in relation to wound healing. For example, I believe with Anderson, that the principal virtue of the Carrel-Dakin method of treatment of wounds is that the fluid so alters the devitalized tissues of the wound as to promote their separation, and at the same time converts the products of local proteolysis into substances which are unfit for bacterial "consumption." The effectiveness of

zinc peroxide in infections due to anaerobic bacteria is believed by Meleney to be due to the maintenance of a highly oxygenated environment in the tissues. Here is another substance employed as a wound antiseptic which perhaps does not directly destroy the bacteria, but presumably alters the oxidation-reduction potential of the bacterial environment so that the organisms are unable to maintain their growth activity and toxin production.

Thus it seems that the substances which we believe may be legitimately used in wounds; namely, the sulfonamides, Dakin's solution, azochloramide, and zinc peroxide, act not as protoplasmic poisons destroying bacteria and tissue cells alike, but each in its special way so influences the tissues as to make them unfavorable to serve as culture media for bacterial growth.

Upon the degree then of tissue injury and contamination will depend the likelihood of infection. To a degree every wound is associated with tissue injury. The more extensive the tissue injury, the larger the amount of proteolysis which has taken place, the more likely the infection. Organisms can multiply and form their toxins much more rapidly in necrotizing tissue than in normal or even viable tissue.

The inconsistencies which may arise from the failure to realize these biological truths is well exemplified in the suggestions made by Bower for the treatment of acute gangrenous and perforative appendicitis, wherein he suggests that Welch bacillus antitoxin be used but the gangrenous appendix be left behind. If the antitoxin is of any usefulness, which I seriously doubt, it is of equal importance that the gangrenous focus upon which the organisms can multiply and elaborate their toxin be removed.

Furthermore, phagocytosis is more active and complete when tissue injury is minimal than when it is extensive. We are too apt to forget the importance of phagocytosis even when such effective bacteriostatic substances as the sulfonamides are being used.

Since sulfonamide bacteriostasis and phagocytosis are greatly impeded in the presence of tissue breakdown, it is of the greatest importance that seriously injured tissue be removed as a part of the treatment. It is because of these factors that we believe that debridement of the grossly injured tissue be practiced. I am in complete agreement with the statement that "any tissue which is obviously crushed or completely deprived of its blood supply should be removed."

DATA FROM GREAT WAR

The available accurate data from the Great War are limited, but they are illuminating. Stokes and his colleagues reported that about 15 per cent of patients with wounds were already infected by hemolytic streptococci on admission to the casualty clearing station, while Fleming and Porteous reported that 90 per cent of these cases were so infected when they were examined at the base. Colebrook has stated that it is probable that the hemolytic streptococcus was responsible for 70 per cent of all deaths due to infections of wounds.

It is highly likely from these reports that an important factor in the increased incidence of hemolytic streptococcic infections, from 15 per cent in the casualty clearing stations to the 90 per cent at the base, was contamination by dressers. If this is true, and I think it is, a large part of the success of the Orr-Trueta method of treatment is associated with the fact that following the application of plaster such secondary contamination does not take place.

Doctor John Fulton has recently told me that the experience in England has been that it is better to have a compound fracture than to have a severe laceration, for the compound fractures protected with plaster have a lower incidence of infection.

In 1939, Jensen, Johnsrud and Nelson began the local use of sulfanilamide in compound fractures and reported remarkable results. More recently Key, Frankel and Burford have reported the clinical experimental effects of the local implantation of

sulfanilamide in various tissues. Their results strongly confirm the findings of the Minneapolis group in that from their experience Key and his co-workers strongly advocate the use of sulfanilamide in contaminated wounds. Clinically they found that more fluid tended to accumulate in the wounds in which sulfanilamide was used although in experimental fractures in rabbits they found no difference in the rate of healing between the fractured bones in which sulfanilamide had been implanted and the controls. Although Bricker and Graham have reported a delay in wound healing in animals receiving sulfanilamide, Key and his associates have failed to confirm this. Furthermore, Taffel and Harvey, in New Haven, and Zintel, Robinson and Eisman in our laboratory, find no difference in the tensile strength of healing gastric and superficial wounds in animals receiving sulfanilamide from those that have not received the drug. Whatever injury the drug may cause is exceedingly slight and is rapidly recovered from.

SUPERFICIAL WOUNDS, COMPOUND FRACTURES

Using the general principles outlined in this paper we have used sulfanilamide therapy by mouth in the prophylactic treatment of severe lacerations, compound fractures and joint injuries for more than three years. Since the publication of the paper by Jensen, Johnsrud and Nelson we have treated these injuries by the primary local implantation of sulfanilamide and supplemented this by oral administration of sulfanilamide beginning one or two days following operation. Jensen and his co-workers have found very high concentrations of the drug locally and our data are in agreement with theirs. In this series 39 drug-treated cases of compound fracture healed without infection while 27 per cent of 94 compound fractures treated by similar methods but without the drug, developed infection. We have treated two severely lacerated wounds and 19 compound fractures including joint injuries with the initial local implantation of sulfanilamide, following debridement and wound irrigation and oral use for a few days thereafter. The patients have received a prophylactic dose of tetanus and gas bacillus antitoxin. There have been no serious infections in this group, that is, it is has not been necessary to provide further drainage and wound healing has progressed favorably. Nor has it as yet been necessary to operate for osteomyelitis in a single case.

In a very much larger group of compound fractures (157) treated similarly by Doctor Bennett and his associates in Baltimore, there have been but two serious infections.

The prophylactic use of sulfonamide compounds in the prevention of wound infections is a supplementary means of inhibiting the multiplication of bacteria which gain access to a wound. Following debridement and wound irrigation the number of bacteria present should be relatively small and the residual non-viable tissue slight. It is under such conditions that sulfonamide therapy can best be used. It can be used in conjunction with the Orr-Trueta method and should, we believe from our experience, complement this method of therapy.

SULFANILAMIDE THERAPY IN SPREADING PERITONITIS

In 1936 we began the use of sulfanilamide therapy in controlling spreading infections of the peritoneum from acute suppurative appendicitis. I shall not here go into the rationale which led us to begin its use. In the earlier cases the drug was given entirely by hypodermoclysis, while during the past year and a half we have placed from four to eight grams in the peritoneum at the time of closure and have continued the drug therapy by a parenteral route.

I am sure that many surgeons were skeptical of our early results as well they might have been. The continued use of this method, however, has fully confirmed our earlier opinion that the method is of great usefulness. A concentration, which in view of the cellular defense is quite adequate, will inhibit the growth of the organisms and permit phagocytosis to proceed along very active lines. Under such circumstances the

tide is frequently turned and what appeared to be a hopeless case has, following operation and drug therapy, resulted in complete recovery.

We have now treated more than 396 patients diagnosed by Doctor Bothe, our surgical pathologist, as having acute diffuse suppurative appendicitis or worse with but a single death. In every instance the infection had spread beyond the confines of the appendix. While sulfonamide therapy does not take the place of skillful surgical treatment, it surely supplements it. The more recent reports of Corey, Brewer, Nichols in England, the many reports from this country that have come to us and the report soon to be published from the Roosevelt Hospital in New York, strongly support our original impression that chemotherapy with certain sulfonamide compounds may be very useful in reducing the morbidity and mortality of what remains in many places a dreadful disease.

SULFONAMIDE THERAPY IN COLON RESECTIONS

Although aseptic methods of bowel suture have reduced the mortality of large bowel resections, postoperative peritonitis, retroperitoneal phlegmon and extensive wound infections still occur. Of these complications peritonitis is the most common. In 1938 we began to use the local implantation of sulfanilamide following resections of the large gut. There have been 43 cases with but a single death. While I should not wish to ascribe the entire good fortune we have had to the use of the locally implanted and parenterally introduced sulfonamide, I am sure that in large part the good results have been due to this.

It is possible that even a minimal drug effect against intestinal pathogens may serve to augment the natural defenses of the peritoneum to the extent that the balance of factors will become favorable to the host. Since the experimental evidence which my associates have obtained demonstrated that such therapy does not deleteriously influence the healing of the intestinal suture line, we believe that the evidence obtained by Garlock and Seley and by ourselves justifies the use of sulfonamide compounds as an adjunct to surgery of the large bowel.

DISCUSSION

It too often happens that with new therapeutic agents faulty methods of control lead to biased results. Too often great reliance is placed upon the newly found agent and too little emphasis on soundly established surgical principles. There is no evidence that sulfonamide therapy can take the place of the important factors outlined for you. The gentle handling of tissues, the maintenance of an adequate blood supply, and immobilization are factors of fundamental importance.

In addition to these are the biological factors now known to influence the healing of wounds. Sokolov, Lanman and Ingalls, Taffel and Harvey, and Hartzell and Winfield, have demonstrated that a vitamin C deficiency may lead to a failure in the laying down of collagen in healing wounds. Thompson and others from our laboratory have shown that the failure of wounds to undergo normal fibroplasia is at times associated with a protein deficiency in the organisms. These studies have been confirmed by Munro, and Hartzell and Winfield. Both latter investigators have, in fact, found the protein factor to be the more important in the patient.

These studies further emphasize the fact that in the care of wounds there are both local and general problems which must be met. The surgeon who focuses his attention upon only one aspect of a highly complex problem will never obtain as satisfactory a result as will the surgeon, who, approaching the problem with an open mind, directs his attention to the many factors present in the local lesion which may influence infection and healing, the employment of sulfanilamide or sulfathiazole locally and by mouth or parenterally as an adjunct to accepted wound treatment, and to the biological factors of a more general character which

may inhibit or facilitate repair in soft tissues or bone even where the local conditions appear conducive to normal healing. Unless he does he will not fulfill Paré's dictum for he will not "seek all means for the quick recovery of the patient" and that "what may of its own nature have been small, may by his negligence have become great."

INSTRUCTIONS TO BE GIVEN THE STERILE COUPLE

By A. P. HUDGINS, M. D.
Charleston, West Virginia

MUCH has been written on the scientific approach, investigation, and treatment of the sterile couple. Too much emphasis cannot be placed on the importance of thoroughness and completeness in these studies.

However, it is also true that while these tests are being made and to supplement other forms of therapy, the patient should be given certain pertinent instructions. This takes time. A systematic outline must be followed lest some important detail be omitted. It is amazing at times how far the scientific tests and treatments have proceeded while the patients themselves were ignored and some basic simple proceedure overlooked.

To illustrate, Rubin, Karnaky and other investigators have reported large numbers of patients who have become pregnant by following simple instructions. For example, that the wife should remain on her back for a half hour after coitus; that coitus should be scheduled according to the menstrual cycle, etc. Unless these instructions are written, many important details may be overlooked. Having all directions written in detail is a great time-saving device as well as a step toward thoroughness. It results, also, in better cooperation on the part of the patient when he understands what is being attempted.

With this in mind, the following outline has been prepared to be presented to the sterile couple, using terms which can easily be understood. It has been found very effective in stimulating more complete cooperation.

The object of this study is to build both the husband and wife to the peak of physical health and to correct any faults in organs or in habits; basing the study on a very detailed examination.

THE AUTHOR

Dr. Hudgins, graduate Medical College of Virginia; interned, Sheltering Arms Hospital, Richmond; postgraduate, Bellevue Hospital, Meredith House, N .Y.; City Hospital, N. Y.; West Virginia Obstetrical and Gynecological Society.

It is needless to say that a normal husband living with a normal wife will produce a pregnancy. If this pregnancy is not prevented and still does not occur, there is something wrong.

For the couple anxious to have a child, there is only one right procedure; to get the facts. Much harm has been done by the well-meaning advice of those who have acquired some misinformation on this subject.

It is essential that the sterile couple come to the doctor with an open mind. They must be willing to cooperate if results are expected. Half way measures such as completing only a part of the study, or carrying out instructions in a careless manner, are very unsatisfactory.

All possible corrections of defects should be made; correcting trouble, whether structural or functional, in both the husband and the wife. This would include everything from abscessed teeth to correction of ulcer in the mouth of the womb, and may include the correction of such conditions as excessive smoking, use of alcohol or other habits detrimental to the general health.

PHYSICIAN'S RECORD

A detailed written record is kept by the physician. A brief outline of the examination, treatments and advice is given below: (This is for both husband and wife).

1. History: General and complete.

A. Be sure to think back over the history given and correct any mistakes or errors.

B. Menstrual irregularities, peculiarities and difficulties are very important.

a. Calendar: It is helpful to record over a period of several months the exact menstrual history.

A suggested calendar outline provides spaces for recording the menses, when started and stopped; the amount of flow, cycle, pain, other trouble and complications, colds, etc.

C. Previous diseases: There are certain diseases which are especially important; for example, mumps with complications, diphtheria, scarlet fever, appendicitis, or venereal diseases.

D. Previous marriages with detailed history of pregnancies (or methods used to prevent pregnancies), how pregnancy ended, complications, infections, etc.

E. Any history of an unusual nature involving the reproductive organs of the husband or wife. For example, unusual pain, discharge, irritations or injuries.

F. Sexual history (asking husband and wife independently). Frequency, timing, whether completed, complications, pain, withdrawal. Jelly or lubrication used, mental or emotional attitude, douches used, position assumed. Previous contraceptive methods used.

2. Examinations, general and complete, of both husband and wife, to get complete record of present physical condition, including any debilitating conditions or infections. For example:

A. Investigation for tuberculosis, abscesses in teeth, or disturbances in other organs.

B. Reproductive organs: Examination to determine any abnormalities of structure or function.

C. Laboratory studies: Blood tests (Wasserman and anemia tests, etc.), urine test and smears, for evidence of infection.

D. Metabolism test: To show the functioning of certain glands of the body.

E. Premenstrual congestion of the uterus. This test is taken just before or at the onset of menstruation to see how well the ovaries have prepared the uterus for pregnancy. It is a test of the function of the ovaries.

F. Rubin (insufflation) test, is the injection of air or gas through the tubes to see if they are open (so that the ova, or egg, may pass through).

This must be done within one week after the end of menstruation. At times an x-ray with the injection of a solution into the uterus and tubes may be necessary.

G. Test for size of opening of the uterus (cervix). This test may be done at any time, and is usually done following menstruation.

H. Ovarian function by vaginal secretions and acidity tests.

EXAMINATION OF HUSBAND

1. Examinations applicable only to husband:

a. Sperm study: The sperm is obtained by use of a rubber (condom). These condoms should be washed well to remove the powder which would be destructive to the sperm. Intercourse is advised in the morning so that the specimen may be brought to the office within one and a half or two hours. The contents may be poured into a small clean bottle or may be brought in the rubber. Heat above body temperature may destroy the sperm. Several (three to five) such specimens should be brought at intervals of from four to seven days apart. There are many different examinations made on these sperm. For example: ejaculation time is noted, quality, turbidity, viscosity, pH, sperm count, sperm activity and duration of activity, presence of blood or pus, and staining for size and shape of sperm.

b. Heuhner test: This is an examination of the sperm taken from the cervix and the vagina following normal intercourse. The patient presents herself for examination

within two hours and the sperm are obtained and examined. The advantage of this test is to determine whether or not there are any detrimental effects on the sperm by the secretions in the body of the wife.

c. It is advisable that the husband have a complete general examination as well as the determination of the sperm potency.

3. Treatment to be given.

A. Correction of all pathology possible.

B. Glandular treatment:

a. This is usually a very important part of the treatment and may include tablets by mouth, treatment by injection and electrical treatments.

C. Dilatation of the cervix: This is often helpful and should be considered in the routine following each mensis, since this seems to stimulate certain glandular activity and opens up the cervix.

D. Rubin tests (or inflation of the tubes) for treatment. This has previously been mentioned in connected with the examination. It is also used in the treatment because, if used carefully, this procedure may open up the tubes in some incidences.

E. General advice:

a. Well known hygienic measures are important. For instance: adequate diet, rest, exercise, sunshine, fresh air and the prevention of exhaustion.

b. Adequate physical activity, especially outdoors, is very helpful.

c. The diet should include quantities of green vegeatbles, fruits, meats and milk. This should be supplemented by vitamins, especially vitamin E and minerals, if there is any question about the deficiency of these elements. (Vitamin E is available economically in raw peanuts).

d. Vacation and adequate rest periods are very helpful and should be planned so that full advantages of sun, fresh air, physical activity and relaxing play can be enjoyed.

e. Intercourse: The ova, or egg, is cast off from the ovary by the female, usually about fourteen days after the onset of the last period. This should be fourteen days before the onset of the next period if the patient is on a twenty-eight day cycle or schedule. For this reason, about fourteen days before the next period is the time pregnancy may be expected to take place and is therefore the ideal time for intercourse to be planned. It is wise to prevent sperm exhaustion at this time by refraining from intercourse for a period preceding this time in the woman's cycle.

SEPARATE BEDS

Separate sleeping beds may be advisable to prevent constant sex stimulation and congestion of reproductive organs, during those periods of required "rest."

A plan found helpful to make sure that the sperm is present for the ova when it is cast off is to use a scheme on successive months. For example:

No intercourse after mensis (a rest period for the sperm) until the scheduled time. Counting the first day of mensis as day one of the cycle and counting on through the mensis. Each month of treatment intercourse is advised as follows: First month intercourse on eleventh, twelfth, thirteenth, and fourteenth day of menstrual cycle. Second month intercourse on twelfth, thirteenth, fourteenth and fifteenth day of menstrual cycle. Third month intercourse on thirteenth, fourteenth, fifteenth and sixteenth day of menstrual cycle. Fourth month intercourse on fourteenth, fifteenth, sixteenth and seventeenth day of menstrual cycle. In this way the sperm is practically certain to be present, even allowing for irregularities of time of ovulation. Soda douches (about one tablespoonful of soda to one pint of water) used just before intercourse, is a time-honored help.

It is advisable for the wife to remain quietly on her back for a period of one-half hour or more after intercourse, since this gives the sperm an ideal chance to find their way into the mouth of the womb.

No sterility investigation is complete until all of these studies have been made. At times even a repetition of some or additional tests are necessary. No one can say that there has been an adequate study of a case until these

procedures have been followed. Anything less is a partial and inadequate investigation and treatment.

There are usually many factors involved in the cause, study and treatment of sterility; therefore, 100 per cent success cannot be promised.

With certain couples, where there are many unfavorable factors, the consideration of a carefully selected adoption may be borne in mind. Adoption in itself is a "treatment." The couple find themselves much happier and less anxious about their problem and this results in reduced nervous strain and tension, an important factor in the treatment of sterility.

The patient may find it helpful to keep a chart for herself and husband to see if all of the tests are being carried out. Out-of-town patients or other uncontrollable factors may make scheduling difficult. The patients can help their physician a great deal in this way.

PATIENTS' CHARTS

A chart for use of the patients has spaces for the wife to enter the date, history, examination, B.M.R., Rubin test, ovarian function, cervical dilatation, menstural calendar, hormone test, premenstural congestion (scraping), Rubin insufflation treatment and special investigation.

The husband's chart provides spaces for entering history, examination, B.M.R., and sperm studies, the latter showing dates every week.

Sulfathiazole in Acute Diarrhea

Treatment with sulfathiazole, a derivative of sulfanilamide, of infants with acute diarrhea and dysentery, hastens the disappearance of the dysentery organisms Shigella paradysenteriae from the stools, Merlin L. Cooper, M.D., Ralph L. Zucker, M.D., and Stewart Wagoner, M.D., Cincinnati, report in *The Journal of the A.M.A.* for November 1.

They found that one of 17 patients treated with sulfathiazole still had a positive stool culture when they were discharged from the hospital as compared with 17 of 34 patients who were treated by other means.

Tuberculosis Abstracts

Furnished Through the Courtesy of the West Virginia Tuberculosis Association

The habit of calm appraisal, characteristic of English physicians seems not to be ruffled by the pressure of war emergencies nor by howling bombs. Tuberculosis work in England, though sometimes interrupted, continues to engage the earnest attention of physicians and laymen. American readers will profit by the clear analysis of S. Vere Pearson of the objects of collapse therapy in the treatment of pulmonary tuberculosis outlined in an address, "What Are We Aiming at in Collapse Therapy?", here condensed for the busy reader.

Aims of Collapse Therapy

The objects of treatment in pulmonary tuberculosis are fourfold: (1) to arrest the progress of the disease, (2) to heal the damaged tissues, (3) to restore the general health and working capacity of the patient, (4) to render his or her sputum negative. Often there is likelihood of clash between these objects and what to do is sometimes overshadowed by the question when to do it. The aims of collapse treatment for pulmonary tuberculosis may be surveyed under eight heads.

1. The constitutional effects of this disease are of more importance than the local. The constitutional symptoms, rather than damage to the lungs, endanger life and health. But the successful treatment of the local lesion is the way to allay the constitutional symptoms. The characteristic feature of the disease, a series of reactions in the connective tissues, only secondarily affects the functions of the breathing apparatus. It is the exudative lesions which produce the most dangerous symptoms and while we have yet to learn how the effects of collapse therapy work on them, it is these lesions which are most amenable to collapse therapy.

2. Its chief characteristic is that it produces reactions in the connective tissues. Aside from its effect on gross lesions, including cavities, collapse therapy produces ischemia, passive hyperemia and lymphatic stasis which encourage proliferation of connective tissues and the production of fibrosis in early lesions. It is well to emphasize this because too often collapse therapy is reserved for the patient with excavation and other gross lesions. The relaxation, the ischemia and the lymphatic stasis affect the diseased parts more than the healthy. But the work of healthy lung tissues is eased because the function

(Continued on page xxix)

President's Page

This is my last official message to you as president of your Association.

I will not attempt to summarize all the interesting events of 1941 in this brief page. Undoubtedly the most important accomplishment of my administration was the passage by the West Virginia Legislature of the Compensation Bill, finally eliminating workmen's compensation injury cases from the field of hospital list practice. The passage of this act has not only added materially (and justly) to the incomes of physicians and hospitals but has had, we believe, a wholesome effect in maintaining the Association's morale throughout the year.

Another interesting development of the past year was the study and consideration last spring of the proposal for voluntary sickness insurance under Association control. The proposal itself was turned down, but the discussion and consideration in the JOURNAL, and in the House of Delegates, had an educational value which we believe was of great worth to our Association membership. As a result of this consideration, we feel that our membership is in an excellent position to properly evaluate future trends in the field of voluntary sickness insurance.

The third development of outstanding interest was the study conducted this past summer by the Association's Committee on Medical Education. The members of this committee personally visited medical schools in Ohio, Kentucky, Pennsylvania, Maryland, Wisconsin and other points in gathering data and information that might be applicable to the problem of medical education in our own state. After several months of intensive work, this committee presented a workable plan to establish a West Virginia unit in some nearby medical school where our students could finish up their last two years of medicine and receive their medical degrees from West Virginia University. This plan is now in the hands of the university board of governors.

The three events which I have just mentioned stand out as milestones in the march of medical progress this past year. There were many other developments hardly less interesting; the trial of the American Medical Association; the Simon conviction in federal court; moving the Association headquarters; the annual session and public meeting in Charleston. All of these things combined to make my year of service a highly interesting and educational experience. To have served as your president has been a privilege for which I will always be grateful. I am sure that my many predecessors have felt the same way.

I have no particular farewell message. But I do wish to take this one last opportunity to express my deep personal appreciation to the rank and file of our membership for their loyalty and responsive support during my term of office. Whatever of worth that was accomplished has been due to the unselfish efforts of our members, our committees, and our councillors and officers.

To Dr. Rogers, my successor who takes office on January first, I extend all good wishes for a successful and eventful administration, and pledge to him my entire support for the coming year.

Robt. C. Bufford

President.

West Virginia Medical Journal

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CHARLESTON, WEST VIRGINIA

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THESE INDIVIDUALISTIC DOCTORS

A prominent West Virginia surgeon recently called the Association headquarters office. "Look", he said, "I don't mind doing free surgery for anybody; rather enjoy doing it, in fact. But I don't want any county official telling me when to give my service and who to give it to."

The doctor quoted above volunteered in 1939 to give an unlimited amount of his service for the Department of Public Assistance surgery during the two year period ending July 1, 1941. He was one of approximately one hundred Association surgeons and specialists who contributed almost $40,000 in free service during this two year interval. Simplified forms were used, which were later sent in to the Association headquarters so that a record of services could be kept. The profession received much public recognition for its contribution.

In spite of the credit received by the medical profession for this vast amount of free surgery, the doctors who voluntarily participated in the plan did not like it. As our doctor in the opening paragraph pointed out, he liked to do free surgery in his own way; not at the command of a third party. This is, we believe, an unfailing characteristic of the medical profession. It is the one thing which will always make it exceedingly difficult to maintain successfully a system of government medicine in this country.

As a rule, doctors are highly individualistic. They like to do things their own way. They shy away from requisitions, special forms and other types of red tape. They do not like to take orders. Being individualistic, they are hard to organize into a compact smooth-working group. This characteristic is a virtue when considered from the viewpoint of a patient seeking treatment for an illness; a fault when considered from the viewpoint of mass production in medicine. We feel that there will never be a successful attempt to regiment the doctors unless it follows a 10 or 20 year educational campaign to revamp the philosophy of the medical profession.

DEARTH OF MANUSCRIPTS

There is a growing feeling on the part of the JOURNAL Publication Committee that many of the county societies of the West Virginia State Medical Association are not utilizing their own talent in the preparation of monthly programs. This conclusion is based on the dearth of scientific manuscripts from Association members. The supply of scientific papers originating in West Virginia has fallen off to such an extent in recent years that it may soon be necessary to reduce the number of pages in the WEST VIRGINIA MEDICAL JOURNAL.

The Publication Committee is not advocating any radical change in the preparation of county medical society programs, but it is felt that more of our West Virginia doctors should be used and more of their manuscripts sent in for JOURNAL publication. One of the purposes of any county medical society is to develop a spirit of scientific inquiry among its membership and to encourage reports, particularly by younger members, on new ideas and trends in medical practice. This purpose cannot be achieved by a county medical society that limits its meeting programs to outside speakers. The leaders in every society should encourage the members to work on papers and manuscripts, and then give such members an opportunity to present

their findings and observations before their fellow practitioners.

We hope the future will bring an increased zest in medical research and medical authorship in West Virginia. County medical society leaders can help a lot to bring this about, and thereby aid greatly in improving their state journal. In the meantime, we urge all county society secretaries to keep continually alert for scientific papers which they think are worthy of publication.

A RECURRING SPECTRE

Although the threat of state medicine has recently been relegated more or less to the background, "the snake is scotched, not killed." Every now and then there appears under a Washington date line some story suggesting that medical regimentation may be attempted under the guise of national defense. The *Journal of the A.M.A.* in a recent issue notes one of these which we quote, although the italics are ours:

"The American Youth Commission, of which Mr. Owen D. Young is chairman, at a recent meeting in Washington, D. C., recommended the establishment of a system of health insurance and listed the following six specific points of which the commission thought the public health authorities would generally approve:

"1. Any system of health insurance should include free choice of physician by the patient (subject, of course, to the consent of the physician).

"2. *Cash benefits,* to cover a part of wages lost by employed persons, *should be an integral and inseparable part of the system. Considering illness as a social problem and not merely as a medical one,* it is as vital to provide shelter and food as it is to pay for the doctor and medicines.

"3. The cost should be assessed and collected, as other social insurance costs are met, from the beneficiaries, *from the employing industry and from the state.*

"4. The medical part of the administration should be conducted as far as possible by medical men, with only such oversight by them of the individual physician as universal experience has found necessary and acceptable.

"5. Physicians should be paid from the insurance fund, either by separate fees for each service rendered or by an annual sum for each patient choosing that physician. While American physicians generally at present would prefer the fee system, the other system has been found more satisfactory in most countries.

"6. *The system should be obligatory,* for approximately the same group for which workmen's compensation is now compulsory."

Such references to regimentation of the profession show clearly that state medicine is still under consideration in high places, and indicate the necessity for eternal vigilance to avoid such a calamity to both populace and profession. The organization best adapted to offset such propaganda is the National Physicians' Committee which has already done yeoman service in lay education as to medical needs. This organization deserves the moral and financial support of every American physician.

DIAMOND JUBILEE MEETING

The Association's Committee on Scientific Work will meet in December to start arranging the program for the 1942 meeting at White Sulphur Springs next July 13, 14, 15, 1942. Members who have program suggestions are urged to get in touch with the committee right away. This can be done through the Association headquarters office in Charleston or through the individual members of the Scientific Committee. These members are Dr. Andrew E. Amick, Medical Arts Building, Charleston; Dr. Wade H. St. Clair, Bluefield Sanitarium, Bluefield, and Dr. Robert J. Reed, Jr., 100 Twelfth Street, Wheeling.

Suggestions and ideas will also be welcomed by the Committee on Scientific Exhibits. It is planned to sponsor approximately 15 scientific exhibits at the White Sulphur

Springs session and most of these are expected to originate with West Virginia doctors and institutions. Scientific exhibit space will be awarded by the committee consisting of Dr. Hu Myers, Philippi; Dr. Fred Whittlesey, Morgantown, and Dr. Russell B. Bailey, Wheeling Clinic, Wheeling.

DEFERMENT AND MEDICAL TRAINING

At the Annual Conference of Editors and Secretaries held in Chicago, November 14 and 15, the subject of training deferment was discussed at great length. Out of the addresses and the multitudinous questions and answers, we glean the following:

1. A man becomes a medical student technically when he has been accepted by a grade A medical school.

2. Upon admission to the junior class, medical students, if physically fit, are eligible for reserve commissions in the Medical Administrative Corps upon the acceptance of which they are no longer subject to the draft.

3. The Surgeons General of the Army and Navy will not have men holding reserve M. A. C. commissions called into actual service, so long as they are medical students or first year internes.

4. Upon the completion of a year's rotating interneship, the holders of reserve M. A. C. commissions will be transferred to the Medical Corps Reserve and, as officers in the medical reserve, are then subject to call to active service.

5. In order to retain deferment status, a student must maintain a scholastic record satisfactory to the faculty of the medical school in which he is a matriculate.

6. While the acceptance of M. A. C. reserve commissions by junior and senior students is on a voluntary basis, it is expected that these students will accept such commissions in numbers satisfactory to the War Department.

7. Residents have no deferment status because of their training program, but are subject to the general draft regulations.

If our estimate of the situation as stated above is correct, as we believe it to be, it is a fair and common sense solution of the problem, and it is our opinion that the medical students of the country are just as patriotic as any other segment of our population and will respond to America's call by applying for M. A. C. reserve commissions in satisfactory numbers.

NEEDS OF THE ARMED FORCES

The United States Army at its present strength of about 1,500,000 officers and men requires approximately 13,000 medical officers. At present a shortage of 1,500 in this normal complement exists. It appears that the physicians of the rural districts and the small towns have responded to the need in relatively greater numbers than have the younger physicians of the larger cities and the great centers of population. In fact, some smaller communities have already reached the point of physician denudation where there is serious threat of lack of sufficient medical service to care properly for the civilian population. One of the reasons for the shortage of medical officers is, of course, the anomalous position in which the nation finds itself of being practically at war and technically at peace, or, as Dr. Frank Lahey expressed it before the Southern Medical Association in St. Louis, "the war is being kept too damned secret." At any rate it would seem to be incumbent upon the younger members of the profession in the larger cities to respond in relatively greater numbers than has been the case up to the present.

Meat a Valuable Food

"Although vegetarianism has been extolled and meat criticized in the past, human experience through history has shown meat to be a valuable food," Doris W. McCray, Cedar Rapids, Iowa, says in a recent issue of *Hygeia*. "Meat is nutritionally economical, it is practical and it certainly appeals to the taste. For the normal person, it is highly recommended."

General News

Dr. T. W. Moore Honored

At the meeting of the Association of Surgeons of the Chesapeake and Ohio Railway held at White Sulphur Springs, October 24-25, Dr. Thos. W. Moore, of Huntington, was elected president for the ensuing year. Dr. M. L. Rea of Charlottesville, Va., was elected vice president, and Mr. George E. Meanley, of Richmond, Va., secretary.

Dr. Moore is a graduate of the Cincinnati College of Pharmacy and of the Medico-Chirurgical College of Philadelphia. For years he has been active in organized medicine. He was one of the organizers of the Cabell County Medical Society of which he was president on two occasions. He is also a past president of the West Virginia State Medical Association, and of the Southern Medical Association. Dr. Moore succeeds Dr. Clarence Porter Jones of Newport News, Virginia.

Southern Medical Meeting

West Virginia doctors played a prominent rôle in the thirty-fifth annual meeting of the Southern Medical Association at St. Louis on November 10-14, 1941. Dr. R. J. Wilkinson of Huntington, was elected chairman of their Council and will serve during the coming year.

One of the outstanding scientific exhibits of the convention was presented by Dr E. E. Myers of the Myers Clinic Hospital, Philippi.

Dr. J. Frank Barker, Huntington, relinquished the Dallas News Golf Cup which he won for low net score at the Louisville meeting in 1940.

West Virginia doctors participating in the Southern Medical Association program were: J. J. Brandabur, George M. Lyon, J. Hallock Moore, E. G. McGavran, and Walter E. Vest.

The following West Virginia doctors were registered at the Southern Medical meeting:

Doctors L. L. Aultz, Omar; Harry E. Baldock, Wm. P. Black, Wm. L. Cooke, George P. Heffner, Willard Pushkin, Victor S. Skaff, and Henry M. Escue, Charleston; James R. Bloss, George D. Johnson, T. W. Moore, Edward F. Reaser, W. E. Vest, R. J. Wilkinson, J. Francis Barker, John J. Brandabur, Charles A. Hoffman, and George M. Lyon, Huntington; John P. Helmick, J. Lewis Blanton, Fairmont; L. P. Jones, Pennsboro; C. G. Stroud, Brownton; J. E. Wilson, Clarksburg; C. B. Chapman, Welch; E. E. Myers, Philippi; Ben B. Rader, Monongah; Robert S. White, West Union; C. J. Reynolds, Bluefield; Wm. C. D. McCuskey, Wheeling.

Urology Essay Award

The American Urological Association has announced the offer of an annual award, not to exceed $500, for an essay or essays on the result of some specific clinical or laboratory research in urology. The amount of the prize is based on the merits of the work presented, and if the Committee on Scientific Research deem none of the offerings worthy, no award will be made.

Competitors shall be limited to residents in urology in recognized hospitals and to urologists who have been in such specific practice for not more than five years.

All essays must be in the hands of the secretary, Dr. Clyde L. Deming, 789 Howard Avenue, New Haven, Connecticut, on or before April 1, 1942.

State Health Conference

Dr. J. M. Coram of Beckley was elected president of the West Virginia Public Health Association at the annual session held in Charleston on November 17 and 18, 1941. Dr. Coram is the Raleigh county health officer and has been active in health organization work for the past several years.

The Public Health Association meeting in Charleston was held jointly with the State Health Officers Conference and the Public Health Council. Dr. C. F. McClintic, state health commissioner, presided at the opening session; Dr. Walter E. Vest, president of the Public Health Council, presided at the opening evening session, and Dr. W. P. Bittinger, presided at the Tuesday session.

Outstanding speaksrs during the two day session included Dr. R. H. Riley, Maryland health commissioner; Dr. C. R. Coffey, assistant surgeon general, United States Public Health Service; Dr. R. A. Vonderlehr, assistant surgeon general, United States Public Health Service; Dr. George Lyon, Huntington; Dr. R. O. Rogers, Bluefield, president-elect of the West Virginia State Medical Association, and Dr. E. G. McGavran, St. Louis county health commissioner, formerly of Morgantown.

Dr. Walter E. Vest, Huntington, was reelected president of the Public Health Council. The names of successful candidates for licensure will be announced in the January JOURNAL.

Flaw In Insurance Plan

The Cleveland News is interested in voluntary medical, surgical and hospital insurance. In October the *News* sent its staff correspondent, Alden H. Sypher to Michigan to study the Michigan Medical Service Plan. This plan is of special interest to JOURNAL readers as it was discussed and considered at great length by the House of Delegates at the Charleston meeting last May. Our readers should therefore be interested in Mr. Sypher's report on Michigan Medical Service which appeared in the November 3, 1941, issue of *The Cleveland News*, which follows:

"The greatest need and the present trend in prepaid medical service is a plan that will cover 'catastrophic' cases and nothing else.

"This opinion was expressed here today by directors in charge of the Michigan Medical Service, largest voluntary prepaid medical service group in the world.

"The plan they outline as the most logical, most likely to win widespread acceptance, would pay the bills for any need, medical or surgical, that required hospitalization. It would not include the care of lesser ailments, nor doctors' home or office calls.

Experience gained during the 20 months the Michigan plan has been operating indicates that unlimited medical service, including home and doctors' office service, costs more than a representative cross-section of subscribers would pay, according to Jack D. Laux, director of Michigan Medical Service.

" 'Home and office service is so frequent, so subject to the individual's determination of the need, that I doubt if it is insurable at all, at least for the present.

" 'Any plan must be based on something beyond the control of the individual who benefits from it. Illness, or surgical need great enough to require hospitalization generally is beyond the control of the individual.'

"The Michigan plan offers unlimited medical service at $2.00 a month per person, or $4.50 for the whole family. Hospitalization is offered in addition.

"Notable in the subscribers to the unlimited service is a sudden upward bounce in the urge to call the doctor, and the presence of long-neglected ills that need treatment.

"Designers of the plan used as a base a study that disclosed that 819 persons in each 1,000 population experience one illness a year, including a large percentage of slight colds and other minor illnesses that do not require a doctor's attention.

"Considering the likely rise in demand for medical care caused by its availability under prepaid service, the planners allowed for 1,500 illnesses a year among subscribers. But the experience has been 1,600.

" 'Just the bookkeeping and administration of handling such a tremendous volume of minor cases tends to make this kind of service uneconomical,' Laux said. 'Generally, this service has cost more than the income from it.'

"An important factor in this kind of service is a subscription list representing an average group of people—including a number of healthy people to offset the demands of those who require more than normal care.

"Because of the difficulty in obtaining a representative cross-section among the Michigan State Highway Department employees scattered over the state, the 2,000 who had subscribed were asked to withdraw from the plan.

"The increase in surgical demands over normal expectancy has reached a ratio of nearly four to one. Expectancy was 39 cases per thousand population. The separate surgical service plan was based on a demand of 80 cases per thousand. Demand actually has been 149.

"This is because so many new subscribers undergo surgery they have needed a long time. Once fixed up, the demand in individual cases drops.

" 'Because the organization is young, and full of new enrollment, the over-all use is high,' Laux said. 'But the point to remember is that after our subscribers are all fixed up, we'll have a very healthy group and comparatively easy sailing.'

"He's not afraid people will get their major operations at subscription rates, then drop out. Experience shows they won't he said.

"John R. Mannix, director of Michigan Hospital Service who distributes the Medical Service along with his own, contends that prepaid medical care on a group basis is not needed.

" 'Any of these service plans simply are a means of budgeting to meet an expected need,' he said.

" 'You don't need to budget for the doctor's home visits or office calls. These are infrequent and budget themselves.

" 'But what you do need a prepayment service plan for is the catastrophic cases—serious illnesses, obstetric, accident, operation—the cases that are catastrophic to the family budget.

" 'All these serious cases that require hospitalization of the patient should be covered by a plan that will pay all the expenses, medical, surgical and hospital, at a reasonable rate.

" 'That's the next step in the program.' "

Medical Corps Promotions

The maintenance and promotion of morale by medical reserve officers in the Army has been seriously affected by a recently adopted policy of the War Department providing for temporary suspension of promotions of medical reserve officers above the rank of Major, regardless of service or ability, *The Journal of the American Medical Association* for November 1 declares in an editorial. *The Journal* says:

"Recently much has been written about morale, an invisible and intangible factor which, like a vitamin, a ferment or a hormone, has vast potentialities. The United States Army in supervising and directing the habits and lives of over a million of our young men of impressionable age is not only building a fighting force but shaping the morale of this nation for years to come.

"Various definitions have been used to describe the elusive nature of morale. A playwright in a recent popular play had his hero call it 'a dirty French word.' The outgoing chief of the Morale Branch of the Army preferred the definition 'a state of mind with reference to confidence, courage, zeal and the like—especially of a number of persons associated in some enterprise, as troops.' A psychologist who was a morale officer in the World War recently emphasized that morale had its basis in physical and economic well-being in addition to mental fitness, while a science writer set out four attributes of morale, with emphasis on physical well-being. * * *

"Only recently President Roosevelt affirmed the present importance of morale with the observation 'we are only as strong as our morale,' and experts on morale have been showering our legislators and our press with suggestions that something be done on a national scale to mobilize and direct our national morale, be it civil or military.

"Rumors and impressions concerning lack of proper morale in the United States Army have been spread over the pages of newspapers and surveys have been made and published in *Life* and *Time* magazines. The recent appointment of Frederick Osborn, New York financial leader, scientist and humanitarian, to be brigadier general in the Army, in charge of the Morale Branch, has already stimulated interest in improved Army morale. Some veteran newspaper reporters who saw the Nazi army in action in Europe and who recently saw the American Army on maneuvers state that even now the United States Army 'has the edge' on the Germans in morale.

"The medical profession has a large concern in the question of Army morale. On the shoulders of 9,950 physicians now in active service as medical officers in the Army rests a large part of the burden of keeping the soldiers mentally and physically healthy. Of this total, 8,700 medical officers have been drawn from the Medical Reserve Corps, while 1,250 are regular Army medical corps officers. The importance of the morale of these medical officers directly and indirectly might well cause the War Department some concern, since the attitude of the reserve medical officers now on active duty has been seriously affected by a policy recently adopted. This policy provides that promotions above the grade of Major are temporarily suspended as far as reserve officers are concerned. The Medical Reserve has existed for thirty-three years. It was the first reserve corps created in the United States Army. Reserve corps were unknown in any other branch of the Army until 1916.

"How can the policy makers in the War Department expect a doctor to have 'a state of mind with reference to confidence, courage, zeal and the like' when he spends a number of years in the Medical Reserve Corps, is called from his practice to active duty and finds that it is impossible for him to secure a promotion above the rank of Major, no matter what his service or what his ability? Perhaps the new chief of the Morale Branch of the Army, under his powers to investigate and recommend morale-building factors to the General Staff, will investigate the morale-destroying effect of this newly adopted policy.

"None of the reserve officers expect promotion over the heads of regular Army officers, but reserve officers who merit advancement should not be routinely held back. Promotion of reserve officers is now provided for by a ruling of the adjutant general which sets forth the requirements for obtaining a 'Certificate of Capacity' which is necessary before

a reserve officer can be promoted to a higher grade. This regulation requires a year of active duty with an efficiency rating of at least 'satisfactory' for grades up to and including that of Major, and of 'excellent' for grades of Lieutenant Colonel and Colonel. This limitation on promotion is fair and should be the only limitation, provided the reserve officer's age and experience warrant a higher rank."

Alcohol in Traffic Deaths

The intoxicated pedestrian is as important a factor as the drunken driver in the problem of highway safety, Thomas A. Gonzales, M.D., and Alexander O. Gettler, Ph.D., New York, conclude from a study, reported in *The Journal of the American Medical Association* for November 1, of the alcohol content of the brains of 3,471 persons killed in vehicle accidents in New York City during the period from January 1, 1928 to December 31, 1937.

They found that one motor vehicle driver was killed to every 11 pedestrians and that 30.7 per cent of the latter were under the influence of alcohol at the time of their deaths.

The two investigators point out that considerable attention has been paid to the effect of alcohol on the driving efficiency of the operators of motor vehicles, but that with two exceptions no study has been made regarding the relation of alcohol to fatal and non-fatal accidents involving pedestrians.

The brain was used by the two men because, as they point out, the alcohol content of the stomach and intestine is of no value as an index of intoxication because alcohol has no effect on the person until absorbed into the blood. They found that when the brain of the victim was not available the liver could be used but cautioned that the alcohol content of the latter may be a little higher during the first hour of the period of absorption of the alcohol into the system or somewhat lower during the period immediately following the absorption process. The difference between the brain and the liver is rarely more than 0.05 per cent, they say, and between the second, third and fourth hour after the last drink has been taken the alcohol content of the brain and the liver are practically the same. In living persons the spinal fluid or the blood is preferred by the two investigators as a test medium to that of urine or the breath.

"According to our studies," the two New Yorkers say, "persons having a brain alcohol content of 0.25 per cent or more showed definite evidences of intoxication. By the term 'intoxication' is meant unstable equilibrium, disturbances of the various faculties and incoordination resulting in a staggering gait. * * * It is common knowledge that one person may become 'dead drunk' from a given quantity of whiskey while another person from the same quantity may show little or no effect. It is exactly for this reason that we are not concerned with how much alcohol the person has consumed nor how much is present in the gastro-intestinal tract, but emphasize that the brain or liver must be used for analysis in fatal cases. * * *"

They classify the alcohol content of the brain as follows: One plus, denoting 0.02 to 0.1 per cent; two plus, 0.1 to 0.25 per cent; three plus, 0.25 to 0.40 per cent, and four plus, 0.40 to 0.60 per cent.

Of 2,472 pedestrians in fatal automobile accidents, 4.5 per cent were found to be one plus, 8.4 per cent were found to be two plus, 16.0 per cent were found to be three plus and 1.8 per cent were found to be four plus. The percentage of those under the influence of alcohol was 30.7.

Of 421 pedestrians in fatal elevated or subway train accidents, it was found that 54.9 per cent were under the influence of alcohol. Of 214 drivers of passenger cars it was found that 56.5 per cent were under the influence of alcohol and of 44 chauffeurs of trucks, 9.1 per cent were under the influence of alcohol.

From the ratio of drivers to pedestrians, the investigators say that "it is obvious that the driver is much better protected than the pedestrian and therefore less liable to fatal injuries. The greater percentage of brain alcohol content in intoxicated drivers who have met with fatal accidents may be accounted for by the smaller number of total fatalities in the drivers."

In their conclusions from the study the two New York men say that "In evaluating the public health and medico-legal implications of highway accidents, the relation of alcohol to pedestrian deaths should not be ignored. The greater number of pedestrian fatalities as compared with the driver deaths and the results * * * which indicate that 30.7 per cent of the pedestrians were under the influence of alcohol and that 26.2 per cent had an alcohol content of two plus or more, emphasize the importance of this observation. Negligence on the part of the intoxicated pedestrian is also an important factor."

County Society News

Barbour-Randolph-Tucker

The Barbour-Randolph-Tucker County Medical Society held its regular meeting in the Imperial Hotel at Thomas on the evening of September 4, 1941. The following doctors were present: Lumpkin, Hall, Clay, Skar, Miller, Butt, Harper, Bolton, Harold Miller of Eglon; Murphy, Jr., K. Myers, Myers, Main, Edna M. Jeffreys, Hu Myers, Miss Arrondale, and D. A. MacGregor and A. L. Wanner of Wheeling Clinic, Wheeling.

Dr. Wanner gave a very interesting talk on "Shock Therapy of the Psychosis." His paper was discussed by Drs. MacGregor, Main, Bolton, Butt, and Lumpkin.

Dr. MacGregor also gave a very interesting talk on "Oral Treatment of Allergy." Discussion by Dr. Karl Myers, Dr. Harper and Dr. Harold Miller.

Dr. Harper reported for the delegates to the state convention.

Dr. Decatur Montoney of Elkins, and Dr. E. O. Wright of Galloway, were elected to membership. The applications for membership of Dr. Junior Myers, Philippi, and Dr. W. L. Maxwell of Elkins, were referred to the board of censors.

Dr. Guy H. Michael, Dr. W. G. Harper and Dr. A. C. Bolton were appointed to represent the society on the Medical Preparedness Committee.

Dr. Joseph Euphrat is in the Army.

GUY H. MICHAEL, *Secretary.*

Central West Virginia

The Central West Virginia Medical Society met at Buckhannan Baptist Church, October 30, 1941, with Dr. J. M. Cofer presiding.

After the dinner the program was turned over to Dr. J. C. Huffman, chairman of the committee, who presented Dr. B. S. Brake of Clarksburg. He read a paper dealing with "Appendiceal Drainage." It was a splendid paper, well discussed, and was recommended for presentation to the state journal for publication.

Dr. John C. Kerr of Clarksburg gave a talk and lantern slides on various skin conditions, which was of great interest to all.

The membership committee reported on the application of Dr. Worth Forman of Buckhannon, and he was elected to membership.

The following new officers were elected: President, Dr. H. O. VanTromp, French Creek, who immediately took over the chair. Vice president, Dr. John E. Echols, Richwood, and secretary and treasurer, Dr. A. B. Bowyer, Elkview, reelected.

The Legislative Committee appointed by the chair was: Drs. M. T. Morrison, Sutton, for Braxton county; John E. Echols, Richwood, for Nicholas county; J. M. Cofer, Bergoo, for Webster county, and J. C. Huffman, Buckhannon, for Upshur county.

Election of delegates to the state convention was delayed until the next regular meeting. Due to Braxton county so often having to hold their meeting during the winter months it was moved that Buckhannon hold the next meeting and then rotate in order to the other counties for the meetings. The committee for the Buckhannon meeting was appointed as follows: Drs. L. M. Deeds, Worth Forman and I. F. Hardman.

The Medical Preparedness Committee was appointed and consists of the same members as the Legislative Committee, including the president and secretary of the society, who will be glad to assist the committee and the state headquarters office at all times.

A. B. BOWYER, *Secretary.*

Hancock County

The county commissioners of Hancock county dedicated their new County Health Department Building at New Cumberland, W. Va., on Tuesday, November 25, 1941. The building was open for inspection during the day and evening. The dedicatory address was made by Doctor C. F. McClintic, state health commissioner, Charleston, at the court house that evening. Hancock county doctors took an active part in this occasion.

MILTON WOLPERT, *Secretary.*

Harrison County

The Harrison County Medical Society was host to the Tri-County Medical Society at the last meeting, November 6. Our guest speaker Dr. Emil Novak, of Baltimore, gave a very interesting discussion on the "Clinical Employment of the Female Sex Hormones." L. E. NEAL, *Secretary.*

Kanawha County

The Kanawha Medical Society held their regular monthly meeting on November 4, at the Daniel

Boone Hotel, and the following officers were elected to take office in January, 1942:

President, Dr. Archer A. Wilson; vice president, Dr. Howard A. Swart; secretary-treasurer, Dr. George P. Heffner; member of board of censors (three years), Dr. M. L. Bonar.

Dr. Harry Andrews of Louisville delivered a very interesting talk on "Acute Laryngo-Tracheo Bronchitis."

GEORGE P. HEFFNER, *Secretary.*

Logan County

The Logan County Medical Society held its regular meeting at the Aracoma Hotel on Wednesday evening, November 19, at eight o'clock.

Dr. J. Hallock Moore of Huntington spoke on "Peroral Endoscopy." There was considerable discussion of Dr. Moore's interesting paper.

Following Dr. Moore's talk there was a short business session. A committee composed of Dr. E. M. Bond, Dr. V. A. Deason and Dr. W. P. Hamilton was appointed to prepare a resolution of respect in memory of Dr. J. L. Stephenson of Emmett, who expired November 13, 1941.

There were fifteen members and one guest present.

W. P. HAMILTON, *Secretary.*

Ohio County

The Ohio County Medical Society met on Friday, November 7, 1941, at 8:30 p. m., in the solarium of the Ohio Valley General Hospital, Wheeling.

Dr. Robert K. Buford, Charleston, president of the West Virginia State Medical Association, and Dr. Walter Putschar, Charleston, pathologist at Charleston General Hospital, gave a joint presentation on "Thyroid Disease From the Standpoint of the Surgeon and Pathologist."

Drs. R. B. Bailey, H. G. Little, Edw. M. Phillips and W. T. McClure of the Ohio society, led the discussion on this very interesting paper.

RIQHARD D. GILL, *Secretary.*

Raleigh County

The regular meeting of the Raleigh County Medical Society was held Monday, November 17, at 7:30 p. m. at the Beckley Hotel. There were thirty-three members and guests present at the meeting.

The following resolution was adopted by the society: "*Resolved,* That the Raleigh County Medical Society approve the wholesale tuberculin testing done by the tuberculosis association and the county health department, but that the charges for x-ray examinations be determined by the hospital groups."

After much discussion of the examinations of the men for selective service, it was voted by the society to expect each member to help out with this work, when that member's turn came.

The scientific program consisted of a very able presentation of "The Toxemias of Pregnancy", by Dr. L. H. Douglass, Professor of Obstetrics at the University of Maryland.

CLARK KESSEL, *Secretary.*

Vitamin K and Tuberculosis

The possibility that synthetic vitamin K may be an addition to the armamentarium in the control of hemoptysis in certain cases of tuberculosis of the lung is suggested by R. F. Sheely, M.D., White Haven, Pa., in *The Journal of the American Medical Association* for November 8 as the result of investigation of the prothrombin or blood clotting factor in patients with this complication.

Dr. Sheelf says that the incidence of hemoptysis has been reported as ranging from 20 to 80 per cent and that one physician found that 33.8 per cent of 1,000 patients admitted to a sanatorium because of tuberculosis of the lung had the condition before discharge or death. Vitamin K is known as the antihemorrhagic vitamin.

In 106 cases of pulmonary tuberculosis, the prothrombin concentration in the blood was studied by Dr. Sheely. A significant deficiency of prothrombin was found in 51 of the patients, the concentration being less than 59 per cent of normal. Fifty of these had far advanced disease.

"The status as to prothrombin level appeared to coincide with the clinical and roentgenologic status of the majority of the patients," he reports.

"It is suggested that the prothrombin concentration should be determined in every case of hemoptysis in pulmonary tuberculosis. In four cases of frank hemoptysis with associated prothrombin deficiency, the elevation of the blood prothrombin level on the administration of vitamin K, orally and parenterally, was a likely factor in the control of hemoptysis."

TWENTY-FIVE YEARS AGO

From the December, 1916, Journal

In the December, 1916 JOURNAL there appeared original articles by Drs. J. T. Geraghty, Roy Ben Miller, Parkersburg; E. E. Clovis, Terra Alta; J. E. Cannaday, Charleston; Ray M. Bobbitt, Huntington, and Emily W. Bauer, R. N., superintendent of the C. & O. Hospital, Huntington.

* * * *

CLINICAL NOTES FROM CONGRESS OF SURGEONS
Philadelphia, October 25, 1916

By J. E. Cannaday, M. D., Charleston, W. Va.

"One of the most interesting surgeons in Philadelphia is Dr. Davis of the Orthopedic Hospital. He conducts his clinic in the large and splendidly equipped Weir Mitchell Memorial Building. He has the advantage of practically an unlimited quantity of material and his results are remarkable. * * *

"One of the most finished surgical techniques seen was that of Dr. Charles H. Frazier of the University Hospital. In his method of handling goitre * * * the patients are handled so cautiously and adroitly that for weeks after the thyroid has been removed they do not even suspect that they have undergone an operation. The tonsils are painted with silver nitrate in order to account for the soreness of the neck. * * * Dr. Frazier shares with Cushing the well-merited reputation of being one of the foremost brain surgeons in the United States. * * * Dr. Crile told me a few years ago that Dr. Frazier was the only surgeon he knew of who, in his operation for trifacial neuralgia cut the sensory root and did not remove the ganglion, thereby preventing to a considerable extent trophic disturbances of the eye. * * * He is apparently as much at home in the surgery of the brain as the average surgeon is in the abdomen. * * *

"Dr. Davis never uses plaster casts in the treatment of club foot in small babies, as he says it is not possible to keep them on unless the knee is flexed and the whole leg included. He corrects the deformity manually then uses a flannel splint. The foot should be straightened every day until the child cries, and then some. By the faithful cooperation of the mother with the doctor in this form of treatment the serious contractions so often seen in these cases can be prevented. * * *

"Dr. Clark is probably the most popular gynecologist in Philadelphia. After doing a Watkins operation for perineorraphy, he demonstrated his operation with a clay model which he uses in teaching and it makes the operation very clear and simple to the audience. * * * He afterwards did an operation for stone in the kidney and it was rather soothing to some of us to see that no stone was found. * *

"The Military Base Hospital at Fairmont Park was quite novel and interesting. It was a five hundred bed institution all under canvas with ambulances, nurses, doctors and everything but the patients. * * *

"We watched Dr. Rugh operate at the Methodist Episcopal Hospital. He did two Albee bone transplant operations for tuberculosis of the spine. * * * His patients wear a plaster cast or jacket for the support of the spine for about three years. * * * Since the perfection of the bone transplant for the relief of Pott's disease, no case of hunchback should develop. * * * Dr. Rugh is a genius with a chisel. His dexterity is remarkable. * * *

"Dr. Albee discussed in detail Carrell's new method of treatment of war wounds. His results are quite remarkable and many of the severely infected wounds are clean and free from pus after ten days of treatment."

* * * *

"Through the efforts of the Division of Sanitary Engineering of the West Virginia State Health Department, six towns, namely, Charleston, Morgantown, Buckhannon, Weston, Clendenin and Stealey Heights have installed plants for disinfecting the drinking water supplies with chlorine gas.

* * * *

"Dr. A. L. Peters of Fairmont has returned from New York where he spent over a month at the Polyclinic.

* * * *

"Among the West Virginia surgeons attending the Clinical Week in Philadelphia were: Drs. Akerman, Caldwell, Reed, Schwinn and Noome of Wheeling; McDonald and Johnson, of Fairmont; Scott and St. Clair, of Bluefield; Cooper, of Hinton; Ogden, of Clarksburg, and Schoolfield of Charleston.

* * * *

"Drs. T. E. Peery and J. B. Kirk spent ten days in Newfoundland during November hunting big game."

Woman's Auxiliary

Marion County

The Woman's Auxiliary to the Marion County Medical Society met on September 30, 1941 at the home of Dr. and Mrs. J. W. Davis, Fairmont. Mrs. Emery D. Wise, presided and there were thirty-eight members in attendance.

Mrs. Brooks Fleming, Jr., member of the executive board of the Fairmont branch of the American Red Cross, spoke on "National Defense."

The society purchased two patron tickets to the Children's Theatre Bureau. The chairman of the various committees gave their committee reports.

Their next meeting was held on October 28, 1941 at the home of Dr. and Mrs. L. D. Howard, Fairmont. Mrs. Emery Wise, president, called the meeting to order. There were sixty guests at this tri-county meeting (Lewis, Harrison and Marion). Honor guests were Mrs. Welch England, state auxiliary president, Parkersburg, and Mrs. D. D. Barker, Parkersburg.

Mrs. England spoke on "Nutrition in the World Crisis." She also presented a resolution which had been accepted by the executive board at their fall meeting.

Mrs. A. H. Stevens, program chairman, announced that the next meeting would be held on December 4, at the Fairmont Hotel. The Marion County Health Institute will also meet at Fairmont on December 4 with Dr. Louis La Place of Philadelphia, who will speak on the "Art of Growing Old."

Mrs. C. W. Waddell presented the musical program, and a high tea followed the regular business meeting.

MRS. H. S. KEISTER, *Secretary*.

McDowell County

The Woman's Auxiliary to the McDowell County Medical Society met in the Appalachian Community Room, Welch, on November 12, with Mrs. H. P. Evans presiding. There were fourteen members and two guests present.

A motion was made and approved to give $10 to the Salvation Army. There was further discus-

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MEDICINE—Two Weeks Intensive Course in Internal Medicine and Two Weeks Course in Gastro-Enterology will be offered twice during the year 1942, dates to be announced. One Month Course in Electrocardiography and Heart Disease every month, except December.

FRACTURES & TRAUMATIC SURGERY—Two Weeks Intensive Course will be offered four times during the year 1942, dates to be announced. Informal Course available every week.

GYNECOLOGY—Two Weeks Intensive Course will be offered four times during the year 1942, dates to be announced. Clinical and Diagnostic Courses every week.

OBSTETRICS—Two Weeks Intensive Course will be offered twice during the year 1942, dates to be announced. Informal Course every week.

OTOLARYNGOLOGY—Two Weeks Intensive Course will be offered twice during the year 1942, dates to be announced. Clinical and Special Courses starting every week.

OPHTHALMOLOGY—Two Weeks Intensive Course will be offered twice during the year 1942, dates to be announced. Informal Course every week.

ROENTGENOLOGY—Courses in X-ray Interpretation, Fluoroscopy, Deep X-ray Therapy every week.

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sion concerning the collection of surgical and medical supplies, which the state auxiliary is sponsoring. Ten dollars was also donated to the American Red Cross.

The next meeting will be held on December 10 at the Appalachian Community Room.

MRS. R. H. FOWLKES, *Secretary*.

Raleigh County

The Woman's Auxiliary to the Raleigh County Medical Society met on October 20, 1941, at the Black Knight Country Club. Mrs. E. Newton DuPuy, president, called the meeting to order. This was a joint session with the Fayette County Medical Auxiliary and there were twenty-four members present. Mrs. Welch England, state president, Parkersburg, was honor guest and spoke on "Nutrition." Mrs. England also outlined the state project for the year, which is to collect old medical equipment which can be repaired and used for defense purposes.

The next meeting was called for November 17.

MRS. HUBERT A. SHAFFER, *Secretary*.

Plasma Saves Sailor

How blood plasma, donated by an unknown American through his local Red Cross chapter to the Army and Navy Blood Plasma Bank, was used on the torpedoed destroyer Kearny to save the life of a seriously injured sailor, is told in a statement issued by the United States Navy Department, November 4. While the destroyer was still limping into port, a series of three transfusions was performed with plasma flown from shore-based supplies by a patrol plane and parachuted into the water from where it was rescued and taken aboard the Kearny. The statement issued by the Navy Department follow in part:

"Blood plasma taken from the bank being raised by donations which citizens of the United States are making to the Navy through the American Red Cross was credited today with saving the life of Leonard Frontakowski, chief boatswain's mate, USN, one of the 10 men injured when the USS Kearney was torpedoed on the night of October 16-17.

"The plasma, delivered far at sea by a Navy

For the local Treatment of Acute Anterior Urethritis
(DUE TO NEISSERIA GONORRHEAE)

SILVER PICRATE*
Wyeth

Silver Picrate, Wyeth, has a convincing record of effectiveness as a local treatment for acute anterior urethritis caused by Neisseria gonorrheae.[1] An aqueous solution (0.5 percent) of silver picrate or water-soluble jelly (0.5 percent) are employed in the treatment.

1. Knight, F., and Shelanski, H. A., "Treatment of Acute Anterior Urethritis with Silver Picrate," Am. J. Syph., Gon. & Ven. Dis., 23, 201 (March), 1939.

A complete technique of treatment and literature will be sent upon request

*Silver Picrate is a definite crystalline compound of silver and picric acid. It is available in the form of crystals and soluble trituration for the preparation of solutions, suppositories, water-soluble jelly, and powder for vaginal insufflation.

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E. H. ALDERMAN, M. D.
E. H. WILLIAMS, M. D.
REX BLANKINSHIP, M. D.

• The sanatorium is a private institution with 135 beds, located in the Ginter Park Suburb on the Richmond-Washington National automobile highway. Midway between the North and the distant South, the climate of this portion of Virginia is almost ideal. Nearby are many reminders of the Civil War, and many places of historic interest are within easy walking distance.

• *The plant consists of fourteen separate buildings, most of which are new, located in the midst of a beautifully shaded lawn, surrounded by a 125-acre tract of land. Remoteness from any neighbor assures absolute quietness.*

• The large number of detached buildings makes easy, satisfactory and congenial groupings of patients. Separate buildings are provided for men and women. Rooms may be had single or *en suite* with or without private bath. A few cottages are designed for individual patients.

• *The buildings are lighted by electricity, heated by hot water, and are well equipped with baths.*

• The scope of the work of the sanatorium is limited to the diagnosis and treatment of nervous and mental disorders, alcoholic and drug habituation. Every helpful facility is provided for these purposes, and the institution is well equipped to care for such patients. It affords an ideal place for rest and upbuilding under medical supervision. Six physicians reside at the sanatorium and devote their entire attention to the patients. A school for trained attendants is an important part of the institution in providing especially equipped nurses—both men and women—for the care of the patients.

• *Systematized out-of-door employment constitutes an important feature of the treatment. Wonderful work in the arts and crafts is carried on under a trained teacher. There are bowling, tennis, croquet, billiards and pool.*

The Sanatorium maintains its own truck farm, dairy, and poultry yards.

ILLUSTRATED BOOKLET ON REQUEST

patrol plane, was used in three transfusions which a naval surgeon administered in a dramatic operation performed aboard the damaged destroyer as it limped to port after being hit by a German submarine.

"The ship's 'sick bay' had been wrecked by the torpedo's explosion. However, Frontakowski was carried to the ship's after dressing station where first aid was administered by an unidentified pharmacist's mate.

"Meanwhile, another destroyer was on its way to assist the Kearny and when she arrived 18 hours after the submarine attack, Lieutenant (junior grade) R. W. Rommell, Medical Corps, U.S. Naval Reserve, a resident of Oneida, New York, was transferred to the Kearny in a motor whale boat to attend the injured men.

"Soon after Dr. Rommell's arrival, a patrol plane, which had put out from a shore base, reached the scene and dropped a package of blood plasma, wrapped in waterproof covering, on the sea beside the second destroyer. It was recovered and taken aboard the Kearny.

"Dr. Rommell used the blood plasma to give Frontakowski three transfusions. The sailor's condition, which had been considered grave, began to show steady improvement.

"Frontakowski is recovering at a service hospital in Iceland now and is believed to be out of danger."

Active blood collecting projects are now sponsored by Red Cross chapters in Washington, Baltimore, Philadelphia, New York, Buffalo, Rochester, and Indianapolis. A number of other chapters are now completing plans for collection projects in their areas.

Defense Advisory Board

Dr. George Baehr, chief medical officer of the Office of Civilian Defense, Washington, D. C., has announced the appointment of a subcommittee of the Advisory Board of the Medical Division, Office of Civilian Defense, to prepare recommendations on protective procedures for hospitals in the event of belligerent action.

Dr. Robin C. Buerki, dean of the Graduate School of Medicine and director of hospitals of the University of Pennsylvania, Philadelphia, a member of the medical advisory board, is chairman of the new subcommittee and the members are:

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pitals, New York City; Dr. Asabel J. Hockett, superintendent of Touro Infirmary, New Orleans; Dr. Anthony J. J. Rourke, medical superintendent of Stanford University Hospitals, San Francisco; Dr. Joseph Turner, director of Mount Sinai Hospital, New York City; Dr. Huntington Williams, commissioner of health of Baltimore.

The subcommittee held its first meeting at the Hotel Commodore, New York, November 8. With Dr. James M. Mackintosh, former chief medical officer of the Scottish Ministry of Health, as a guest to advise the group. Measures for preventing or minimizing damage to buildings, handling of casualties, evacuation, provision and protection of supplies, and training of personnel for specific duties in case of bombing were discussed in detail. The basis for discussion was a study made by a committee of the American Hospital Association on physical defense of hospitals, of which Dr. Hockett is chairman. It is expected that a report will be issued jointly by the hospital association committee and the committee representing the Office of Civilian Defense.

Dr. Mackintosh also conferred with the staffs of the medical and civilian protection divisions of the OCD at the Washington headquarters, November 7, describing in detail Britain's organization of its protective services, its early mistakes and the measures taken to correct them.

The basic organization for rescue work in a given area consists of three essential groups with a central control, police, rescue and fire services, ARP control and medical service.

One of the early mistakes was the belief that it

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was imperative to have first aid workers on the scene of a bombing immediately. Bitter experience showed that injured persons were usually buried under rubble and glass of their homes and that hours of work by the demolition and rescue squads were often necessary before first aid could be given.

Dr. Mackintosh emphasized the necessity for a central ambulance control. Ambulances are dispatched only by the central control and are not allowed to move from a bombed area until routes to hospitals have been surveyed. To stop "panic calls" from individuals, private telephones are now cut off the moment an air raid warning sounds.

First aid posts, in addition to their obvious function of caring for the injured, are invaluable as rendezvous for rescue workers, physicians and nurses as well as the general population, who may become lost in the blackout, frightened, choked and blinded by dust, he said. In the first aid post the workers can clean up, have a cup of tea and return refreshed to their activities.

Antisyphilitic Drugs

Evidence that ascorbic acid (vitamin C) may be the solution to the treatment problem presented by those persons with syphilis who are hypersensitive to the antisyphilis drugs known as arsenicals, is presented in *The Journal of the American Medical Association* for November 15 by Herman N. Bundesen, M.D.; Hans C. S. Aron, M.D.; Regina S. Greenebaum, M.D.; Chester J. Farmer, M.A., and Arthur F. Abt, M.D., Chicago.

"Our studies", the Chicagoans say, "give promise that the majority of hypersensitive patients whose local cutaneous reaction to neoarsphenamine is fully prevented by ascorbic acid should be able to tolerate intravenous therapeutic doses of neoarsphenamine if the ascorbic acid in the circulating blood is maintained at a level high enough to inhibit the formaton of toxic products of oxidation."

It is pointed out by the authors that the number of people who have severe symptoms of intolerance to neoarsphenamine is still considerable. "In the recent reports of the medical corps of the United States Navy," they say, "the following figures are given: During the fifteen year period from 1925 to 1939, 1,301,913 doses of neoarsphenamine administered; 305 severe reactions and 49 deaths were recorded following these injections, or one death or severe reaction to every 3,678 administrations of the drug. In addition, 618 mild reactions

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were recorded, giving a ratio of one reaction to every 1,346 doses of neoarsphenamine administered. Any prospect of a way to reduce the incidence of these unfortunate reactions should be vigorously pursued."

The work of the Chicagoans supports previously reported studies indicating the possibility that vitamin C has a beneficial influence on arsenical sensitivity. The studies of the authors were conducted with neoarsphenamine and mapharsen, a proprietary antisyphilitic drug related to arsphenamine. They found that when solutions of the two drugs are left in contact with air, brownish black oxidation products are formed but that this oxidation can be prevented for a period of at least forty-eight hours when one part of ascorbic acid by weight is added to three parts of neoarsphenamine. Mapharsen solutions may be protected from oxidation in a similar way. It was also found that the same oxidation takes place when patches soaked in solution of neoarsphenamine or mapharsen are applied to the skin. "When ascorbic acid is added to the patch test solutions these changes can be completely prevented," the authors declare.

"A subsequent report will be given of the results obtained in treating hypersensitive patients in whom arsenical treatment had previously been regarded as absolutely contraindicated."

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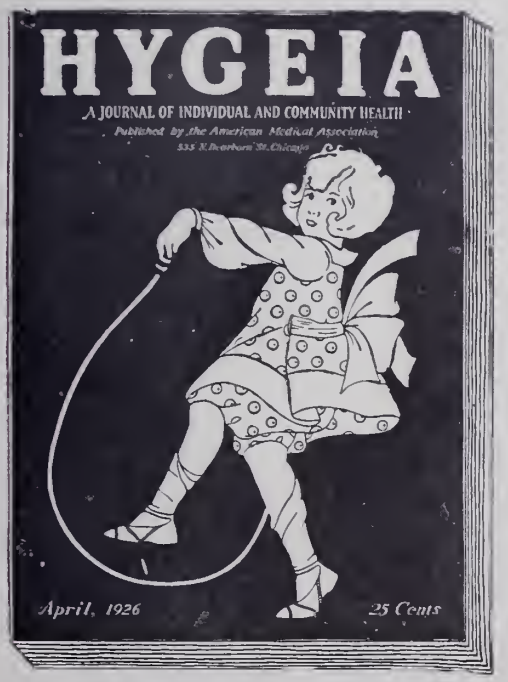

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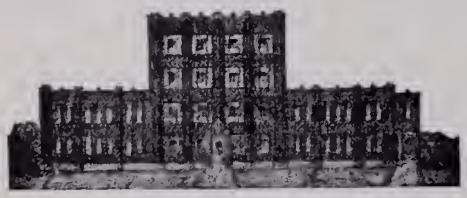

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BOOK REVIEWS

Introduction to Medicine

"Introduction to Medicine," Don C. Sutton, M. S., M. D., Associate Professor of Medicine, Northwestern University School of Medicine; Chief of the Cardiac Clinic, Cook County Hospital, Chicago; Attending Physician, Evanston Hospital. With 144 text illustrations and 14 color plates. C. V. Mosby Company, St. Louis, 1940.

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TUBERCULOSIS ABSTRACTS

(Continued from page 559)

of the latter is interfered with less than it was, if the toxemia be lessened.

3. Tubercle bacillus is master of the ceremonies nearly always. It is a mistake to be apprehensive of secondary organisms within the lesions in the lung, for it is the tubercle bacillus which is the master of ceremonies. It is time the bogey of mixed infection was laid to rest. Only the tubercle bacillus is responsible not only for early infiltration of the Assman type (early round foci) or early excavation, but also for liquefaction.

4. A re-expanded, healed lung should be our aim whenever and as far as ever possible. This means that a reversible and temporary type of collapse is to be preferred whenever possible.

5. The best induced collapse is always a selective one. So-called "respiratory traumatism" (abnormal stretching of diseased parts) is based on the idea that the movements of respiration do harm to a diseased lung and that collapse treatment counteracts this harm by resting the lung. But on occasion collapse treatment may increase the harm, as for example when a stretched pleural adhesion attached viscerally to the region of a cavity in the lung occurs in an artificial pneumothorax. It must ever be an aim of collapse therapy to amend and convert such a condition. The mechanisms which produce harm are those which increase the stretching of diseased parts. These we must discover with the aid of roentgenograms and, even more, by careful observations, on the screen, of respiratory move-

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ments. (Slow motion cinematography is being increasingly employed, says the author, to study respiratory movements.)

6. It is obtained by relaxing tension of diseased parts. This has long been emphasized but even now, when studying movements, during breathing and coughing too much attention is often given to cavities rather than to the influence of such movements upon the relaxation of other pulmonary tissues.

The movements of respiration affect the diseased parts of the lung either directly or indirectly—a distinction not always easy to make. The surrounding parts can be pulmonary or non-pulmonary and their effect upon the tensions within the thorax must be considered. Collapse therapy aims at relieving these and permitting relaxation. Perhaps even more important than expansion, contraction and movement of cavities is the effect of respiratory movements on the lung tissues surrounding and in proximity to a cavity.

7. In dealing with cavities our aim is, of course, to get rid of them. Collapse plays a part in this by:

a. Closing the broncho-cavernous passage;

b. Stabilizing and reducing intracavitary pressures;

c. Starving and debilitating the tubercle bacilli on the cavity walls.

"It always strikes me," says the author, "that the hole in the lung has held far too much of the attention." Efforts to classify cavities have been useful but not inconclusive. We are often in doubt today as to the interpretation of an annular shadow. Mistakes are still made between a ring of fibrosis, a zone of reaction around a central focus and one of atelectasis. Even the supposed hole may be found to be no hole on postmortem examination. There are other difficulties. Probably the best classification of cavities is that of Coryllos; open, closed and narrowed.

Early cavities disappear sometimes without any measure to relax anything. When a cavity does not close spontaneously, collapse therapy is used. Artificial pneumothorax would succeed more frequently if the suitable case was found earlier and proceeded with, especially if cauterization of adhesions were more popular. The excavated lung needs relaxation from without, by detaching it from the bony cage of the thorax; but air under too high a pressure within the cavity itself can keep the hole open, and if such air be absorbed and the compressed lung around the cavity re-expands it will fill the

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gap. This process is accomplished by getting the bronchial opening blocked and may occur more or less by accident. Cavity closure after an ineffectual pneumothorax occurs fairly frequently and can be aided by a temporary phrenic operation, but the reason why the cavity closes cannot be explained. Closure may come about through a kinking of the bronchus draining the cavity though a case has been published in which a kinking had a disastrous effect. Our aim should be to know when a kinking has occurred, when it is benefiting the patient and how it has come about. We are far from this knowledge as a rule but able to form an opinion much more often than formerly.

There are several lessons which can be learned for collapse therapy from work in connection with Monaldi's method; namely, the transpleural decompression treatment of cavities. One of these has to do with the blocking of the cavity. When a cavity becomes blocked the oxygen is absorbed and the tubercle bacilli languish. There is good evidence to show that an aim of treatment should be to starve and debilitate the tubercle bacilli on the walls of the cavities. When that has been achieved it remains for means to be found to allow the pericavernous tissues, either by expansion or indirectly by their contractile powers, to close the cavity.

8. The prevention of the discharge of the bacilli. Cavities are the main, if not the only source of the expectorated positive sputum, augmenting the danger of bronchogenic spread and spread to other persons. An important aim of treatment, therefore, is to prevent the discharge of tubercle bacilli. But the restoration of health must come first; a well-trained ex-patient who behaves sensiby is not a danger. The restoration of the patient to work must not be forgotten in the desire to eliminate cavities and positive sputum.

Finally, our aims should always be based upon clinical and x-ray observations which should not be directed too exclusively to cavities nor to the lung condition. Collapse therapy is not purely mechanical. The many factors of the situation must be taken into account. Our knowledge of collapse treatment is advancing quickly and modifying our practice. That is the ever fascinating interest of medicine. As it progresses certain problems are solved, discussion about them ceases, but new ones arise.

What Are We Aiming At In Collapse Therapy? by S. Vere Pearson, M.D., Tubercle, July, 1941.

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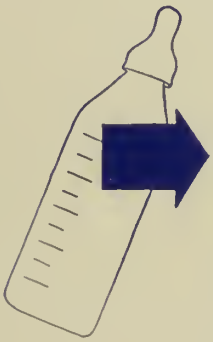

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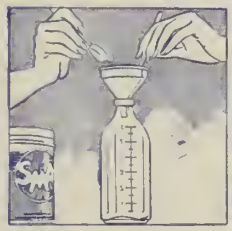

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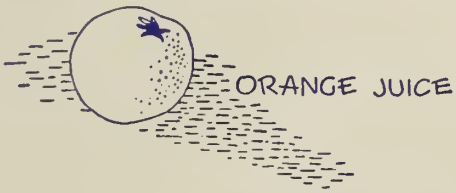

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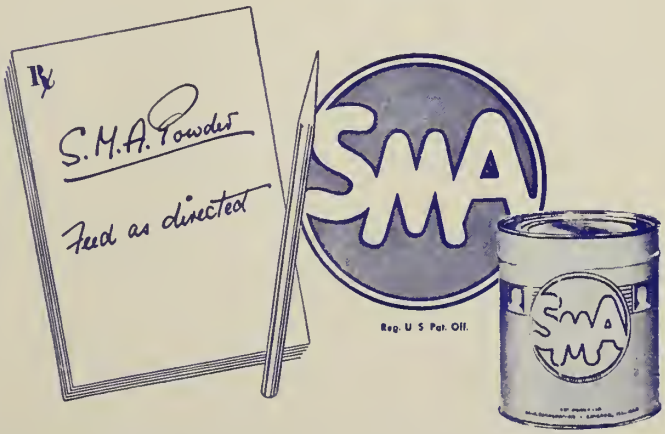

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